

3.10 Hazardous Materials and Wastes

3.10.1 Introduction

This section describes the regulatory setting and affected environment associated with hazardous materials and wastes, the potential project impacts related to hazardous materials¹ and wastes, and the mitigation measures that would reduce these impacts. Construction and operation of the Fresno to Bakersfield Section of the California High-Speed Train (HST) System could cause ground disturbance (including disturbance of groundwater or surface water) near a known contaminated site or sites, or where contamination could exist in the study area. Construction and operation of the project could also involve the use, storage, and disposal of hazardous materials and wastes in the study area.

The *Final Program EIR/EIS for the Proposed California High-Speed Train (HST) System* (Statewide Program EIR/EIS) (Authority and FRA 2005) concluded that the project would have a less-than-significant impact on hazardous materials and hazardous wastes when viewed on a systemwide basis. However, it also acknowledged that, at the program level, it was not possible to identify specific hazardous material impacts or the nature and severity of contamination at specific sites. The Authority and FRA committed to project-level analysis that included identifying and evaluating potential sites through database searches, review of land use, site reconnaissance, and review of records and consultation with regulatory agencies. The Authority and FRA committed to design practices, such as elevating the track, that avoid and/or minimize potential impacts through design refinement. Development and past and current use of the study area is a key aspect in understanding the potential for contamination related to hazardous materials and wastes because particular types of land use are more prone to specific contamination concerns. Historical land use is discussed in Section 3.17, Cultural Resources and Paleontological Resources, and current land use is discussed in Section 3.13, Station Planning, Land Use, and Development. Additional information regarding hazardous materials and wastes is presented in Section 3.6, Public Utilities and Energy, Section 3.8, Hydrology and Water Resources, and Section 3.9, Geology, Soils, and Seismicity. Section 3.11, Safety and Security, discusses emergency response preparedness in the event of leaks, spills, or accidents involving hazardous materials or wastes. The Hazardous Materials and Wastes Technical Report (Authority and FRA 2012) provides more detailed information on hazardous materials and hazardous wastes, more-comprehensive information about the investigation process, and a complete overview of pertinent elements of the affected environment. As discussed in Section 3.1.5 and the Executive Summary, the analysis in this chapter includes revisions based on design refinements and analytical refinements. Gray shading is used as a guide to help the reader navigate the revisions.

3.10.2 Laws, Regulations, and Orders

This section discusses the federal, state, and local laws, regulations, and orders that pertain to hazardous materials and wastes in the study area.

3.10.2.1 Federal

Resource Conservation and Recovery Act (RCRA) [42 U.S.C. § 6901 et seq.]

Regulates the identification, generation, transportation, storage, treatment, and disposal of solid and hazardous materials and hazardous wastes.

¹ For purposes of this chapter, hazardous materials include oil and gas.

**Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
[42 U.S.C. § 9601 et seq.]**

Regulates former and newly discovered uncontrolled waste disposal and spill sites. Established the National Priorities List of contaminated sites and the "Superfund" cleanup program.

Clean Air Act [42 U.S.C. § 7401 et seq.]

Protects the general public from exposure to airborne contaminants that are known to be hazardous to human health. Under the Clean Air Act, the U.S. Environmental Protection Agency (U.S. EPA) established National Emissions Standards for Hazardous Air Pollutants, which are emissions standards for air pollutants, including asbestos.

Clean Water Act [Section 402(p) (33 U.S.C. § 1342(p)]

Regulates discharges and spills of pollutants, including hazardous materials, to surface waters and groundwater.

Safe Drinking Water Act [42 U.S.C. § 300(f) et seq.]

Regulates discharges of pollutants to underground aquifers, and establishes standards for drinking water quality.

Toxic Substances Control Act [15 U.S.C. § 2601 et seq.]

Regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials.

Federal Insecticide, Fungicide and Rodenticide Act (7 USC § 136 et seq. and 40 CFR 152.1–171)

The Federal Insecticide, Fungicide and Rodenticide Act regulates the manufacturing, distribution, sale, and use of pesticides.

Hazardous Materials Transportation Act [49 U.S.C. § 5101 et seq. and 49 CFR. Parts 101, 106, 107, and 171-180]

Regulates the transport of hazardous materials by motor vehicles, marine vessels, and aircraft.

Hazardous Materials Transportation Uniform Safety Act of 1990 (Public Law No. 101-615)

The Hazardous Materials Transportation Uniform Safety Act regulates the safe transport of hazardous material in intrastate, interstate, and foreign commerce. The statute includes provisions to encourage uniformity among different state and local highway routing regulations, to develop criteria for the issuance of federal permits to motor carriers of hazardous materials, and to regulate the transport of radioactive materials.

Emergency Planning and Community Right to Know Act (42 U.S.C. § 11001 et seq. and 40 CFR 350.1 et seq.)

Regulates facilities that use hazardous materials in quantities that require reporting to emergency response officials.

Federal Compliance with Pollution Control [Executive Order 12088]

Requires federal agencies to take necessary actions to prevent, control, and abate environmental pollution from federal facilities and activities that federal agencies control.

3.10.2.2 State

California Code of Regulations, Title 14, § 1724.3, Well Safety Devices for Critical Wells

Governs safety devices required on "critical wells" located within 100 feet of an operating railway.

California Code of Regulations, Title 27, Division 2, Chapter 3, Subchapter 4, Gas Monitoring and Control at Active and Closed Disposal Sites

The regulations within Article 6 set forth the performance standards and the minimum substantive requirements for landfill gas monitoring and control as it relates to active solid waste disposal sites and to proper closure, post closure maintenance, and ultimate reuse of solid waste disposal sites to assure that public health and safety and the environment are protected from pollution due to the disposal of solid waste.

California Code of Regulations, Title 27, Division 2, Chapter 3, Subchapter 5, Closure and Post Closure Maintenance of Landfills

Provides post closure maintenance guidelines, including requirements for an emergency response plan and site security. Regulates post closure land use, requiring protection of public health and safety and the built environment, as well as the prevention of gas explosions. Construction on the site must maintain the integrity of the final cover, drainage and erosion control systems, and gas monitoring and control systems. All post-closure land use within 1,000 feet of a landfill site must be approved by the local enforcement agency.

California Public Resources Code § 21151.4

Requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mile of the project about potential impacts on the school if the project might reasonably be anticipated to emit hazardous air emissions, or handle an extremely hazardous substance or a mixture containing an extremely hazardous substance.

Porter-Cologne Water Quality Act [California Water Code § 13000 et seq.]

Regulates water quality through the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB), including oversight of water monitoring and contamination cleanup and abatement.

Hazardous Materials Release Response Plans and Inventory Law [California Health and Safety Code § 25500 et seq.]

Requires facilities using hazardous materials to prepare Hazardous Materials Business Plans.

Hazardous Waste Control Act [California Health and Safety Code § 25100 et seq.]

Similar to RCRA on the federal level, regulates the identification, generation, transportation, storage, and disposal of materials the State of California has deemed hazardous.

Safe Drinking Water and Toxic Enforcement Act [Proposition 65, Cal. Health and Safety Code § 25249.5 et seq.]

Similar to the Safe Drinking Water Act and the Clean Water Act on the federal level, regulates the discharge of contaminants to groundwater.

California Government Code Section 65962.5

Requires the California Department of Toxic Substances Control (DTSC) to compile and maintain lists of potentially contaminated sites throughout the State of California. (This section of the Government Code also pertains to the Hazardous Waste and Substances Sites [Cortese] List.)

3.10.2.3 Local Jurisdiction Plans and Policies

Senate Bill 1082, passed in 1993, created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (Cal/EPA 2009). The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. The California Environmental Protection Agency and other state agencies set the standards for their programs, while local governments implement the standards. These local implementing agencies are called Certified Unified Program Agencies (CUPAs). For each county, the CUPA regulates/oversees:

- Hazardous materials business plans.
- California accidental release prevention plans or federal risk management plans.
- The operation of underground storage tanks (USTs) and aboveground storage tanks (ASTs).
- Universal waste and hazardous waste generators/handlers.
- Onsite hazardous waste treatment.
- Inspections, permitting, and enforcement.
- Proposition 65² reporting.
- Emergency response.

Beyond the statewide regulations the CUPAs administer, policies and regulations found in a number of local and regional plans (including general plans and municipal codes) address hazardous materials and wastes. Policies and regulations are intended as guides for the appropriate use of potentially hazardous materials, the cleanup of contaminated sites, and the preparation of emergency response plans. Table 3.10-1 lists local plans and policies. Regional plans have not been prepared for the management and disposal of hazardous waste and materials.

² Proposition 65 is a California voter-approved initiative that requires the state to publish a list of chemicals known to cause cancer or birth defects or other reproductive harm and requires businesses to notify Californians about significant amounts of chemicals in the products they purchase and use.

Table 3.10-1
Local Plans and Policies

Jurisdiction	Policy Title	Summary
Fresno County	Fresno County General Plan, Health and Safety Element, Goal HS-F, Policies HS-F.1 to Policy HS-F.8, and Program HS-F.A to HS-F.C (Fresno County 2000)	The policies in this element of the general plan are designed to ensure that development projects minimize public risks associated with both intended and unintended exposure to hazardous materials and wastes.
City of Fresno	2025 Fresno General Plan, Safety Element, Objective I-6 and Policies I-6-a to I-6-I (City of Fresno 2002)	The policies outlined in this element support the objective to reduce and control the adverse effects of hazardous materials on the public's health, safety, and welfare so as to promote the health and welfare of local residents and the productive capacity of industry.
	Emergency Operations Plan (City of Fresno 2008)	The Emergency Operations Plan describes the city's actions during a response to an emergency, the role of the Emergency Response Center, and agency coordination. The plan also identifies policies, responsibilities, and procedures required to protect the health and safety of communities in Fresno.
Kings County	2035 Kings County General Plan, Health and Safety Element, HS Objective B1.5 and HS Policy B1.5.1 (Kings County Planning Department 2010)	Development applications are evaluated to determine the potential for hazardous waste generation and to determine that sufficient financial assurance is available to the county to cover waste cleanup and/or site restoration in instances where the site has been abandoned or the business operator is unable to remove hazardous materials from the site.
	Kings County Area Plan for Hazardous Materials Emergency Response (Kings County 2007)	The basic purpose of Kings County Area Plan for Hazardous Materials is to describe the roles, responsibilities, and procedures for those agencies tasked with performing hazardous material emergency response activities within jurisdictional boundaries.
Tulare County	Tulare County General Plan 2030 Update, Health and Safety, Goal HS-4, Policies HS-4.1 through HS4.7 (Tulare County 2012)	The policies in the general plan are established to protect residents, visitors, and property from hazardous materials through their safe use, storage, transport, and disposal.
Kern County	Kern County General Plan, Safety Element, Section 4.4, Policy 2, Implementation Measure A; Section 4.9, Policies 1 and 2, Implementation Measures A and B (Kern County Planning Department 2009)	The Kern County General Plan contains the following policies or implementation measures: facilities used for the manufacture, storage, and use of hazardous materials will comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation; the proposed siting or expansion of hazardous waste facilities will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan; and innovative technologies to manage hazardous waste streams generated in Kern County will be encouraged.

Table 3.10-1
Local Plans and Policies

Jurisdiction	Policy Title	Summary
City of Bakersfield	Metropolitan Bakersfield General Plan, Safety Element, Public Safety, Hazardous Materials/Uses, Goal 4, Policies 7, 8, and 16 (City of Bakersfield and Kern County 2007)	All new discretionary development projects are subject to environmental and design review on a site-specific, project-by-project basis, including, but not limited to, an assessment to determine whether hazardous materials present potential health effects on human health.
	Bakersfield Municipal Code, Title 8, Chapter 8.60, Certified Unified Program Agency (City of Bakersfield 2010)	The CUPA for the City of Bakersfield is the Bakersfield Fire Department, which is responsible for implementing the unified program within the incorporated area of the city of Bakersfield. Site inspections for hazardous materials programs (aboveground storage tanks, underground storage tanks, hazardous waste treatment, hazardous waste generators, hazardous materials management and response plans, and the Uniform Fire Code) are consolidated and accomplished by a single inspection.

CUPA = Certified Unified Program Agency

3.10.3 Methods for Evaluating Impacts

For the purpose of this assessment, hazardous materials are defined as any materials that, because of quantity, concentration, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety, or to the environment, if released. Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, and any material that a handler or the administering regulatory agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment (California Health and Safety Code Section 25501(o)). Although often treated separately from hazardous materials, petroleum products (including crude oil and refined products such as fuels and lubricants) and natural gas are considered in this analysis because they might also pose a potential hazard to human health and safety if released into the environment. Hazardous wastes include residues, discards, byproducts, contaminated products, or similar substances that exceed regulatory thresholds for properties of toxicity, ignitability, corrosivity, or reactivity. Federal and state regulations identify by name specific hazardous wastes that the EPA has determined are hazardous and has designated as "listed wastes."

This analysis identified sites of Potential Environmental Concern (PEC sites or PECs) using aspects of the methodology provided in the California Department of Transportation's initial site assessment guidance document (Caltrans 2006a) and American Society for Testing and Materials (ASTM) Standard Practice E 1528-06 (ASTM 2006). Sites were identified as PECs where there is the possible presence of any hazardous material or waste under conditions that indicate the possibility of an existing release, a past release, or a threat of a release of the hazardous material or waste into structures on the property or into the ground, groundwater, or surface water of the property. This designation includes sites where hazardous materials or wastes are handled and stored in compliance with laws and regulations (ASTM 2006).

Hazardous materials could be released accidentally during construction or operation of the HST project during transport, use, or disposal of the materials, or the demolition of buildings and roadways with potential asbestos-containing materials (ACMs) and/or lead-containing materials. This analysis considered potential effects based on proximity of the HST alignments to known hazardous material and waste sites using a combination of environmental database record searches, analyses of historical topographic maps and aerial photography, site reconnaissance, and regulatory agency files review and consultation. The *Fresno to Bakersfield Section: Hazardous Materials and Wastes Technical Report* (Authority and FRA 2012) details this analysis.

The significance criteria, as incorporated from the CEQA Guidelines, Appendix G, Section VII, Hazards and Hazardous Materials, are qualitative. These criteria use terms such as "create a significant hazard," "result in a safety hazard," and "impair implementation." This methodology, combined with objective information (such as locations of hazardous materials sites and qualitative hazard assessments) is used to consider whether a significant impact under CEQA could occur.

3.10.3.1 Methods for Evaluating Effects under NEPA

Pursuant to NEPA regulations (40 C.F.R. 1500-1508), project effects are evaluated based on the criteria of context and intensity. Context means the affected environment in which a proposed project occurs. Intensity refers to the severity of the effect, which is examined in terms of the type, quality, and sensitivity of the resource involved, location and extent of the effect, duration of the effect (short- or long-term), and other considerations. Beneficial effects are identified and described. When there is no measurable effect, an impact is found not to occur. The intensity of effects is the degree or magnitude of a potential effect, described as negligible, moderate, or substantial. Context and intensity are considered together when determining whether an impact is significant under NEPA. Thus, it is possible that a significant adverse effect may exist when, on balance, the impact has negligible intensity or is even beneficial. For hazardous materials and wastes, the terms are defined as follows:

- Effects of negligible intensity are defined as an increased risk to the public or to the environment related to hazardous materials or substances that is slightly more than, but very close to, the existing conditions.
- Effects of moderate intensity are defined as a localized increased risk to the public or the environment related to hazardous materials or substances.
- Effects of substantial intensity are defined as a regional increased risk to the public or environment related to hazardous materials or substances.

3.10.3.2 CEQA Significance Criteria

Current conditions, including the hazardous material and waste sites identified in the available databases, provide the baseline against which the HST alternatives are compared. For this project, the following criteria are used in determining whether the project would result in a significant impact with respect to hazardous materials and waste:

- Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Creates a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

- Is located on a site that is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5 (the Cortese list) and, as a result, would create a significant hazard to the public or the environment.
- Emits hazardous air emissions or handles extremely hazardous substances or mixtures containing extremely hazardous substances within 0.25 mile of a school and would pose a health or safety hazard to students or employees.

Checklist items in Appendix G of the CEQA Guidelines pertaining to hazards, such as risk from nearby airports or wildland fires, are discussed in Section 3.11, Safety and Security.

3.10.3.3 Study Area for Analysis

For hazardous materials and wastes, the study area consists of the construction footprint for tracks, stations, and heavy maintenance facilities (HMFs), plus a 150-foot buffer of the construction footprint to account for hazardous material and waste issues on adjacent properties. To be consistent with ASTM database-search standard practice, the PEC site database search used a 1-mile buffer area on either side of the alternative alignment centerlines. Analysts attempted to identify potential large or regionally important PEC sites (such as CERCLA National Priorities List sites) within the 1-mile buffer where the extent of the site or contamination could extend well beyond the mapped address—or from outside the 1-mile buffer to extend to locations within the study area—but the database search results did not identify any such sites. Therefore, Section 3.10.4, Affected Environment, and Section 3.10.5, Environmental Consequences, discuss the conditions and potential effects in the construction footprint and 150-foot buffer. The study area was also increased to 0.25 mile on either side of the construction footprint to analyze the potential for a change in land use adjacent to landfills, consistent with Title 27 of the CCR, to assess landfill potential to release methane gas which may present an explosion risk. To evaluate potential impacts on schools in a manner consistent with the CEQA significance criteria, the study area near school locations was 0.25 mile on either side of the construction footprint.

3.10.4 Affected Environment

This section discusses the existing hazardous materials and wastes setting. After discussing the regional context, this section provides information about general areas of concern, specific PEC sites within the study area, and the proximity of the construction footprint to schools. Additional history and detail related to the regional setting, geology, hydrogeology, and water resources are presented in the Hazardous Materials and Wastes Technical Report (Authority and FRA 2012).

Since the installation of the rail and road corridors in the early 20th century, the study area has been transformed from its natural state (e.g., grasslands, woodlands, swamps, small rural towns) into major centers of agribusiness, industry, and urbanization. Hazardous materials have been used in the study area for at least 100 years.

The Fresno to Bakersfield Section of the HST System is situated in the Central/San Joaquin Valley, an immense level plain between the Sierra Nevada and the Coastal Range mountains. This portion of the valley is characterized by vast reaches of agricultural land, two large cities—Fresno and Bakersfield—and numerous small towns. The affected environment related to hazardous materials and wastes includes the areas and communities within the incorporated boundaries of the cities of Fresno, Hanford, Corcoran, Wasco, Shafter, and Bakersfield, and the unincorporated areas and communities within the counties of Fresno, Kings, Tulare, and Kern. The areas within Fresno, Hanford, Corcoran, Wasco, Shafter, and Bakersfield are considered urban or suburban; most of the unincorporated areas between these cities are considered rural and are dominated by agricultural land uses. Four alternative station locations are proposed within the urban areas of Fresno and Bakersfield. The Kings/Tulare Regional Station-East

Alternative is in a rural area east of Hanford or alternatively, the Kings/Tulare Regional Station-West Alternative is in an incorporated area west of Hanford. Most of the areas described above as urban or suburban occur along active rail corridors, as do most of the rural areas.

All proposed alignment alternatives for the Fresno to Bakersfield Section are in the Tulare Lake Hydrologic Region (HR) (DWR 2003). The Tulare Lake HR covers approximately 10.9 million acres (17,000 square miles); this HR covers all of Kings and Tulare counties and most of Fresno and Kern counties. Significant geographic features include the southern half of the San Joaquin Valley, the Temblor Range to the west, the Tehachapi Mountains to the south, and the southern Sierra Nevada to the east (DWR 2003).

The HR has 12 distinct groundwater basins and 7 subbasins of the San Joaquin Valley Groundwater Basin, which crosses north into the San Joaquin River HR. These basins underlie approximately 5.33 million acres (8,330 square miles), or 49% of the entire HR area. The aquifers are generally quite thick in the San Joaquin Valley subbasins, with groundwater wells commonly exceeding 1,000 feet in depth. The maximum thickness of freshwater-bearing deposits (4,400 feet) occurs at the southern end of the San Joaquin Valley. Based on site-specific depth to groundwater information that was taken from current groundwater monitoring reports available on GeoTracker³, depth to groundwater in the study area can vary from near surface in areas where the alignment alternatives cross the Kings River, to over 300 feet below ground surface (bgs) in areas of heavy agricultural pumping in northern Kern County. Depth to groundwater varies with specific location, and can also vary with the seasons. Table 3.9-4 in Geology, Soils, and Seismicity provides typical depths to groundwater in the project area.

There are no applicable regional plans or policies pertaining to hazardous materials and wastes within the Fresno to Bakersfield Section study area.

3.10.4.1 General Areas of Concern

Specific PEC sites associated with hazardous materials and wastes are discussed in Section 3.10.4.2, Specific Sites of Concern. In addition to these sites, it is anticipated that hazardous materials and wastes are present within the study area because current and past land uses commonly involve such substances. A variety of federal, state, and local laws, regulations, and orders provide oversight for the management and cleanup of these materials and wastes to minimize risks to employees, public health, and the environment. Circumstances of general concern in the study area include the following existing conditions that could be encountered during construction or operation of the proposed HST project:

- ACM and lead-based substances common to older structures and roadway systems.
- Hazardous materials and wastes typically associated with roads, railway and utility corridors, agricultural areas, and industrial facilities.

The portions of regional waterways in the study area are not known to be contaminated with mercury or other heavy metals (RWQCB 2006). Therefore, this potential issue is not analyzed further. The following sections summarize the types of substances and conditions that could be expected within each of the general areas of concern.

Potential Building Material Hazardous Substances

The study area includes industrial, commercial, and residential structures. Buildings constructed before 1971 might be contaminated with lead. Lead was used as a pigment and drying agent in

³ Geotracker is a State Water Resources Control Board Internet-accessible database system used to track and archive compliance data from authorized or unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from underground storage tanks.

oil-based paint until the Lead-Based Paint Poisoning Prevention Act prohibited such use. Lead-based paint might still be present on buildings in the study area. In addition, weathering and routine maintenance of painted structures might have contaminated nearby soils with lead (U.S. EPA 2009a).

Asbestos is a mineral fiber. Prior to the 1980s, a variety of building construction materials commonly used asbestos for insulation and as a fire-retardant. There is no health threat if ACM remains undisturbed and does not become airborne. However, if ACM is damaged or disturbed by repair, remodeling, or demolition activities, microscopic fibers become airborne and can be inhaled. When airborne asbestos is inhaled, the thin fibers irritate tissues and resist the body's natural defenses. Asbestos is linked to cancers of the lung and the lining of internal organs, as well as to asbestosis and other diseases that inhibit lung function (U.S. EPA 2009b). State and federal regulations typically require preparation of, and compliance with, ACM abatement plans before disturbing ACM.

Potential Road and Railway Corridor Hazardous Substances

Specific to roadways, yellow paint and tape used for pavement marking before 1997 might exceed the hazardous waste criteria for lead under Title 22, California Code of Regulations. If so, such materials would need to be disposed in a disposal facility authorized to accept this type of waste. In addition to lead-containing materials, ACM might be found in roadway materials, such as the material used before the 1980s for expansion joints in the pavement.

Leaded gasoline was used as a vehicle fuel in the United States from the 1920s until the late 1980s. Although lead is no longer used in gasoline formulations, lead emissions from automobiles are a recognized source of contamination in soils along roadways (i.e., aerially deposited lead). Surface and near-surface soils along heavily used roadways have the potential to contain elevated concentrations of lead (DTSC 2009).

Contaminants common in railway corridors include wood preservatives (e.g., creosote, arsenic) and heavy metals in ballast rock. ACM might also occur in ballast rock and soils associated with railroad tracks. In addition, soils in and adjacent to these corridors might contain herbicide residues as a result of historic and ongoing weed-abatement practices.

Potential Utility Corridor Hazardous Substances

The study area includes several urban areas and associated public utilities. Contaminants common to utility corridors include wood preservatives, herbicide residues, and polychlorinated biphenyl (PCB)-containing equipment. Domestically, PCBs were produced from 1929 until their production was banned in 1979. They belong to a broad family of manufactured organic chemicals known as chlorinated hydrocarbons. PCBs, which have a range of toxicity, vary in consistency from thin, light-colored liquids to yellow or black waxy solids. Because of their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications. Equipment in the study area that might contain PCBs includes transformers, capacitors, and other electrical equipment; oil used in motors and hydraulic systems; and thermal insulation material (e.g., fiberglass, felt, foam, cork) (U.S. EPA 2010). In particular, older pole-mounted electrical transformers typically contain PCBs.

Landfills

Landfills within 0.25 mile of the study area were analyzed for their potential to release methane gas, which may present an explosion risk. Table 3.10-2 lists the name and location of identified landfills and the current status of the landfills and provides an assessment based on the existing information of the potential for landfill gas release. These sites include historical burn dumps, closed landfills, and an active municipal landfill. Typically, old burn dumps pose a limited landfill

gas risk, because the organic material that would normally decompose to form methane has been burned and cannot further decompose. However, the risk would vary based on the degree to which each site was burned; whether additional waste was placed (legally or illegally); and whether the waste was burned before landfill gas had the chance to be generated. Under current regulations, all operating and most closed landfills are required to have landfill gas migration control systems and monitoring programs. Additionally, most active and many closed landfills have landfill gas capture and treatment/destruction systems. Therefore, the likelihood of methane landfill gas impacting an area beyond the landfill property is low.

The BNSF Alternative contacts a portion of the Chestnut Avenue Sanitary Landfill; the footprint for the Kings County–Hanford HMF Site contacts a portion of the Hanford Inert Landfill; and the grade crossing near Hanford contacts a portion of the Hanford Municipal Disposal Site. None of these three sites has active remediation cases or violations on record. California Code of Regulations, Title 27, Division 2, Chapter 3, Subchapter 5, Closure and Post-Closure Maintenance of Landfills, provides post-closure maintenance guidelines, regulates post-closure land use requiring protection of public health and safety and of the built environment, and provides guidelines regarding methane gas monitoring and control to prevent gas explosions. Construction on the site must maintain the integrity of the final cover, drainage and erosion control systems, and gas monitoring and control systems. All post-closure land use within 1,000 feet of a landfill site must be approved by the local enforcement agency.

Table 3.10-2
Landfills within 0.25 Mile of the Study Area

Name	Address	Status	Location	Potential for Landfill Gas Release?
Calwa Yard Solid Waste Site ^a	3901 E. Vine Ave, Fresno, CA 93725	Accepting waste; Solid Waste Site – Class III – Landfills for non-hazardous solid wastes.	0.24 mile east of the BNSF Alternative.	None – Quarterly inspections have not indicated a release.
Orange Avenue Disposal Site ^a	3280 S. Orange Ave, Fresno, CA 93725	Not accepting waste; diesel and other non-petroleum hydrocarbon volatile organic compounds; open case – site assessment, pollution characterization.	0.15 mile west of the BNSF Alternative. 0.25 mile west of the Fresno HMF Site.	Low – Quarterly inspections have not indicated a release; however, groundwater is affected. Based on inspections and distance from the alignment, the potential for methane impact in the area to be disturbed by the project is low.
Chestnut Avenue Sanitary Landfill ^a	12825 S. Chestnut Ave, Fresno, CA 93725	Not accepting waste; solid-waste facility – closed site; contaminated site – groundwater; no violations found.	The BNSF Alternative passes through the northeast corner of the landfill site. BNSF Alternative may affect site monitoring wells.	Low – Landfill gas is monitored at perimeter monitoring probes. Monitoring indicates all perimeter probes are below the regulatory threshold of 5% methane.

Table 3.10-2
Landfills within 0.25 Mile of the Study Area

Name	Address	Status	Location	Potential for Landfill Gas Release?
Hanford Inert Landfill (aka Old Hanford Landfill) ^b	7869 Houston, Hanford, CA 93230	Not accepting waste; inert debris; engineered landfill; construction debris (case closed).	0.25 mile west of the BNSF Alternative. The Hanford HMF Site footprint includes the east end of the landfill site.	Low – There is no known release and the site is actively monitored.
Hanford Municipal Solid Waste Disposal Site; (aka Kings Waste and Recycling Authority) ^b	7803 Hanford-Armona Rd (Hanford-Armona Rd and 8th Ave), Hanford, CA 93230	Accepting waste; large-volume transfer/processing facility; agricultural, construction/demolition, industrial, mixed municipal, other designated, tires, wood waste.	0.02 mile west of the BNSF Alternative. Hanford-Armona Road overpass footprint includes the northern ¼ of the site.	Low – There is no known release; Previous environmental investigations yielded no releases of landfill gas or leachate-impacted groundwater; however, the site is not actively monitored.
Corcoran Sanitary Landfill ^b	6061 Nevada Ave, Corcoran, CA 91206	Not accepting waste; closed solid-waste disposal site.	0.01 to 0.05 mile east of the BNSF Alternative. 0.6 mile west of the Corcoran Bypass Alternative.	Low – based on distance from alignment. Landfill gas is not monitored; however, site groundwater is monitored.

^a Source: Fresno County CUPA 2011.

^b Source: CalRecycle 2011.

Oil and Gas Wells

The Fresno to Bakersfield Section of the HST passes through Division of Oil, Gas, and Geothermal Resources (DOGGR) District 4 and District 5. As of 2009, Kern County in District 4 was California's top oil-producing county, with 81% of the state's 52,144 active oil wells, or about 42,236 active producing wells. By comparison, Fresno, Kings and Tulare counties have a total of 2,179 active oil wells as of 2009 (DOGGR 2009). In addition there are thousands of inactive and abandoned wells in these four counties. These active and inactive oil wells are mostly in Kern County. The BNSF Alternative (in the Wasco and Bakersfield areas) and the Bakersfield South Alternative also pass through two active oil refinery properties, and traverse multiple oil and natural gas pipelines.

Locations of oil wells (both active and abandoned) were plotted from data obtained from the DOGGR database, which was accessed for the Revised Draft EIR/Supplemental Draft EIS in 2012, and then accessed again in September 2013 in preparation of the Final EIR/EIS. The database contained a total of 61 oil and gas wells within 200 feet of the centerline or within the construction footprints of the following alternatives, in contrast to the 56 shown with the 2012 database:

- BNSF (Fresno to Bakersfield) 15 wells
- Wasco-Shafter Bypass 18 wells

<ul style="list-style-type: none">• Bakersfield South• Bakersfield Hybrid	14 wells 14 wells
--	----------------------

Hazards associated with constructing and operating the HST near established oil and gas fields, oil and gas wells, pipelines, and refineries primarily involve the release of hazardous gases, such as methane, carbon dioxide, and hydrogen sulfide.

Potential Agricultural Operation Hazardous Substances

Before manufacturers can sell pesticides in the United States, the U.S. EPA must evaluate the pesticides thoroughly to ensure that they meet federal safety standards to protect human health and the environment. U.S. EPA grants a "registration" or license that permits a pesticide's distribution, sale, and use only after the company meets the scientific and regulatory requirements.

In evaluating a pesticide registration application, U.S. EPA assesses a wide variety of potential human health and environmental effects associated with use of the product. Potential registrants must generate scientific data necessary to address concerns pertaining to the identity, composition, potential adverse effects, and environmental fate of each pesticide.

Within the study area, numerous agricultural enterprises have historically stored, handled, and applied pesticides and herbicides on row crops and orchards. Pesticide residues might persist in study area soils. Areas that might be of concern include (1) pesticide-handling areas that lack concrete pads, berms, or cribs to contain spills or leaks during handling and storage, and (2) rinse water from washout facilities for pesticide-application equipment that has not been properly collected and treated before discharge. Equipment-repair and petroleum-storage areas might also be of concern.

Potential Industrial Facility Hazardous Substances

The study area includes a number of industrial areas, which are commonly clustered along railroad rights-of-way and associated with the larger communities of Fresno and Bakersfield. Such industrial areas often represent areas where businesses have used hazardous materials over long periods of time. Often PEC sites are associated with these areas. PEC sites can also include small industrial facilities that demonstrate poor housekeeping practices and small-quantity generators of hazardous wastes that the CUPA regulates. Automobile service facilities that collect used engine oil and health care providers that produce medical wastes are examples of such small-quantity generators. In addition to the concentrated use of hazardous materials and the generation of hazardous wastes, it is assumed that hazardous material transport and storage activity is more intense in industrial areas than in other areas.

Potential Release of Hazardous Materials and Wastes during Transportation

State Route (SR) 99, SR 41, SR 43, and the BNSF Railway within the study area serve as major transportation corridors. Hazardous materials, hazardous wastes, and petroleum products are a subset of the tremendous volume of goods routinely shipped along these transportation corridors. In addition, more intensive hazardous material transport and storage activity is assumed to occur at regional landfills and recycling facilities (e.g., the Cedar Avenue Transfer and Recycling Station, formerly the Orange Avenue Disposal Site) and a few large industrial operations (e.g., petroleum bulk plants).

Three agencies maintain searchable databases that track hazardous material releases in reportable quantities:

- The EPA maintains the Hazardous Materials Incident Report System, which contains hazardous material spill incidents that are reported to the U.S. Department of Transportation.
- The California Office of Emergency Services maintains the California Hazardous Materials Incident Report System, which contains information on reported hazardous material accidental releases or spills.
- The SWRCB maintains the Spills, Leaks, Investigations, and Cleanup (SLIC) program, which contains information on reported hazardous material accidental releases or spills.

Although most hazardous materials and wastes are transported without incident, spills and other accidental releases have been documented within the study area. Hazardous materials spills and accidental releases that are cleaned up immediately and do not require regulatory action are not considered PEC sites. Therefore, most of the incident reports in these databases are not classified as PEC sites, although larger releases may be considered PEC sites.

3.10.4.2 Specific Sites of Concern

Three general types of PEC sites are located within the study area—historical, conceivable, and current:

- **Historical PECs.** These are sites where previous contamination has occurred. For the purpose of this evaluation, Historical PECs are cases that have been closed by the regulatory agencies (i.e., the DTSC or the RWQCB), or have a “no further action required” status, and as such, were determined unlikely to require further remedial actions. These sites are not shown on Figures 3.10-1 through 3.10-5, below. It is noted, however, that such sites might still contain contaminants below state action levels. Leaking UST and DTSC EnviroStor sites closed by the RWQCB or local agencies before April 1, 2008, would not necessarily have been closed based on a risk assessment that considered volatile organic compounds (VOCs) and the vapor intrusion pathway. Assembly Bill 422 now requires such a risk assessment.

In addition, sites with closed cases/no further action status might be under deed restrictions or other institutional controls that might hinder subsequent development. These sites are not discussed further herein. The Hazardous Materials and Wastes Technical Report (Authority and FRA 2012) provides a full discussion of Historical PECs, the criteria followed to identify PECs using the definitions for hazardous wastes, materials, and substances provided in the California Department of Transportation (Caltrans) initial site assessment guidance document, dated 2006 (Caltrans 2006a), and the California Office of State Project Development Procedures and Quality Improvement in Division of Design *Project Development Procedures Manual*, Chapter 18 (Caltrans 2006b).

- **Conceivable PECs.** These sites have a substantial amount of petroleum product or hazardous material storage or use, but no known violations or accidental releases have occurred. Examples of conceivable PECs include dry cleaners, metal-finishing operations, petroleum bulk plants, fueling stations, and large industrial facilities. Fueling stations that use buried tanks often have leaking equipment that goes undetected for extended periods of time. In addition, fueling stations are subject to spills because of operator error. Large industrial facilities that store and use a wide variety of chemicals might require further site assessment to determine if hazardous material contamination has occurred. Conceivable PEC sites are identified in this section because of their potential as future hazards, even though they do not currently present concerns.

- Current PECs.** As indicated by information obtained from various databases, these sites are in punitive/regulatory phases before remediation, active remediation phases, or post-remedial monitoring phases. Current PEC sites are shown on Figures 3.10-1 through 3.10-5, below. Current PEC sites have been further categorized for this analysis according to the level of risk they are believed to present. High-risk sites might be substantially contaminated and typically involve contaminants that are difficult to remediate (e.g., perchloroethylene), have larger volumes of contaminants, or have long histories of industrial or commercial use. A site might also be considered high-risk if limited information is available about the site, which creates greater uncertainty about the extent of contamination and the costs of remediation. Sites where the nature of potential contamination is better known (based on existing investigation data), the contaminants are not as toxic or difficult to treat, and remediation approaches are straightforward or already occurring are considered medium-risk sites.

Table 3.10-3 summarizes the numbers of PEC sites by alternative alignment. The values shown in the table represent the total number of conceivable (low-risk), current high-risk, and current medium-risk PECs for each alternative alignment in groups of two alternative alignments, with the difference in number of PEC sites between the two alignments in each group totaled in the

Table 3.10-3
Potentially Affected PEC Sites by Alternative Alignment

HST Alternative Alignment	Number of PEC Sites*		
	Conceivable (Low-Risk)	Current High-Risk	Current Medium- Risk
HST Section: BNSF Alternative			
Sites unique to the BNSF Alternative	58	10	23
HST Section: BNSF and Hanford West Bypass Alternatives			
BNSF Alternative	3	0	2
Hanford West Bypass Alternatives	6	4	1
Difference using Hanford West Bypass Alternatives	3	4	-1
HST Section: BNSF and Corcoran Elevated Alternatives			
BNSF Alternative	6	2	0
Corcoran Elevated Alternative	6	2	0
Difference using Corcoran Elevated Alternative	0	0	0
HST Section: BNSF and Corcoran Bypass Alternatives			
BNSF Alternative	6	2	0
Corcoran Bypass Alternative	0	2	0
Difference using Corcoran Bypass Alternative	-6	0	0
HST Section: BNSF and Allensworth Bypass Alternatives			
BNSF Alternative	1	0	0
Allensworth Bypass Alternative	0	0	0
Difference using Allensworth Bypass Alternative	-1	0	0

Table 3.10-3
Potentially Affected PEC Sites by Alternative Alignment

HST Alternative Alignment	Number of PEC Sites*		
	Conceivable (Low-Risk)	Current High-Risk	Current Medium- Risk
HST Section: BNSF and Wasco-Shafter Bypass Alternatives			
BNSF Alternative	6	3	2
Wasco-Shafter Bypass Alternative	1	0	0
Difference using Wasco-Shafter Bypass Alternative	-5	-3	-2
HST Section: BNSF and Bakersfield South Alternatives or BNSF and Bakersfield Hybrid Alternatives			
BNSF Alternative	6	2	1
Bakersfield South Alternative	6	2	1
Bakersfield Hybrid Alternative	5	2	0
Difference using Bakersfield South Alternative	0	0	0
Difference in using the Bakersfield Hybrid Alternative	-1	0	-1
HST = high-speed train PEC = Potential Environmental Concern * Individual PEC sites may affect more than one alternative			

bottom row of each comparison.⁴ The table also lists PEC sites that are unique to the BNSF Alternative.

PECs on the BNSF Alternative

Some PEC sites are unique to the BNSF Alternative, because they occur in locations without other alignment alternatives. The study area within the city of Fresno contains a dense commercial/industrial zone. The BNSF Alternative study area in the city of Fresno has 70 current PEC sites with known contamination that are in various stages of investigation or remediation; 7 of the sites are considered high-risk, 17 of the sites are considered medium-risk, and 46 of the sites are considered conceivable or low-risk sites. Most sites involve storing, dispensing, or using petroleum products, agricultural chemicals, or other hazardous materials.

The seven current high-risk sites on the BNSF Alternative in the Fresno area are (Figure 3.10-1).

- VOPAK USA. This site is high risk based on its proximity to the alignment alternatives and unresolved contamination issues involving the industrial chemical tetrachloroethene (PCE).
- Former Burlington Northern Santa Fe Ice House. This site is high risk based on its proximity to the alignment alternatives and unresolved surface and subsurface contamination issues involving chromium and hexavalent chromium.

⁴ For example, for the comparison of the BNSF and Wasco-Shafter Bypass alternative alignments, Table 3.10-3 shows three current high-risk PEC sites identified along the BNSF Alternative, with none along the Wasco-Shafter Bypass Alternative. Thus, constructing the project with the Wasco-Shafter Bypass Alternative would result in interaction with three fewer known high-risk PEC sites in this area.

- FMC Corporation. This site is high risk based on its proximity to the alignment alternatives and the unresolved surface, subsurface, and groundwater contamination issues involving a wide variety of agricultural chemicals, including DDT, endrin, toxaphene, dieldrin, and ethion.
- Weir Flowway, Inc. This site is high risk based on its proximity to the alignment alternatives and the potential for unresolved subsurface contamination issues, including petroleum products, chromium, and trichloroethene (TCE).
- Professional Asbestos Removal Corp; (aka PARC Environmental). Removes and disposes of various hazardous waste materials, including ACMs. Facility has multiple environmental regulatory agency violations: Transporters - General, Generators - Pretransport, Generators - General; letter of intent to initiate enforcement action (4/12/2004); final compliance order (6/4/2004). These violations are generally for clerical or documentation errors in transport manifests or other documentation.
- Truck City. Diesel tank release; the RWQCB is the lead agency. The case is open, with active site assessment and pollution characterization being performed; the drinking water is affected.
- South Fresno Regional Groundwater Plume. This site is high risk based on its proximity to the alignment alternatives and the unresolved surface and subsurface contamination issues involving certain volatile organic compounds (e.g., PCE), metals, and pesticides.

From south of the city of Fresno, commencing approximately at Jefferson Avenue, passing through parts of rural Fresno, Kings, Tulare, and Kern counties to the point where the BNSF and the Bakersfield South alternatives diverge, the BNSF Alternative has 21 PEC sites unique to it (i.e., sites that are not in proximity to any of the bypass alternatives) with known contamination that is in various stages of investigation or remediation. Three of these sites are considered high-risk sites (in Wasco, discussed below); 6 are considered current medium-risk PEC sites; and 12 are considered conceivable PEC sites.

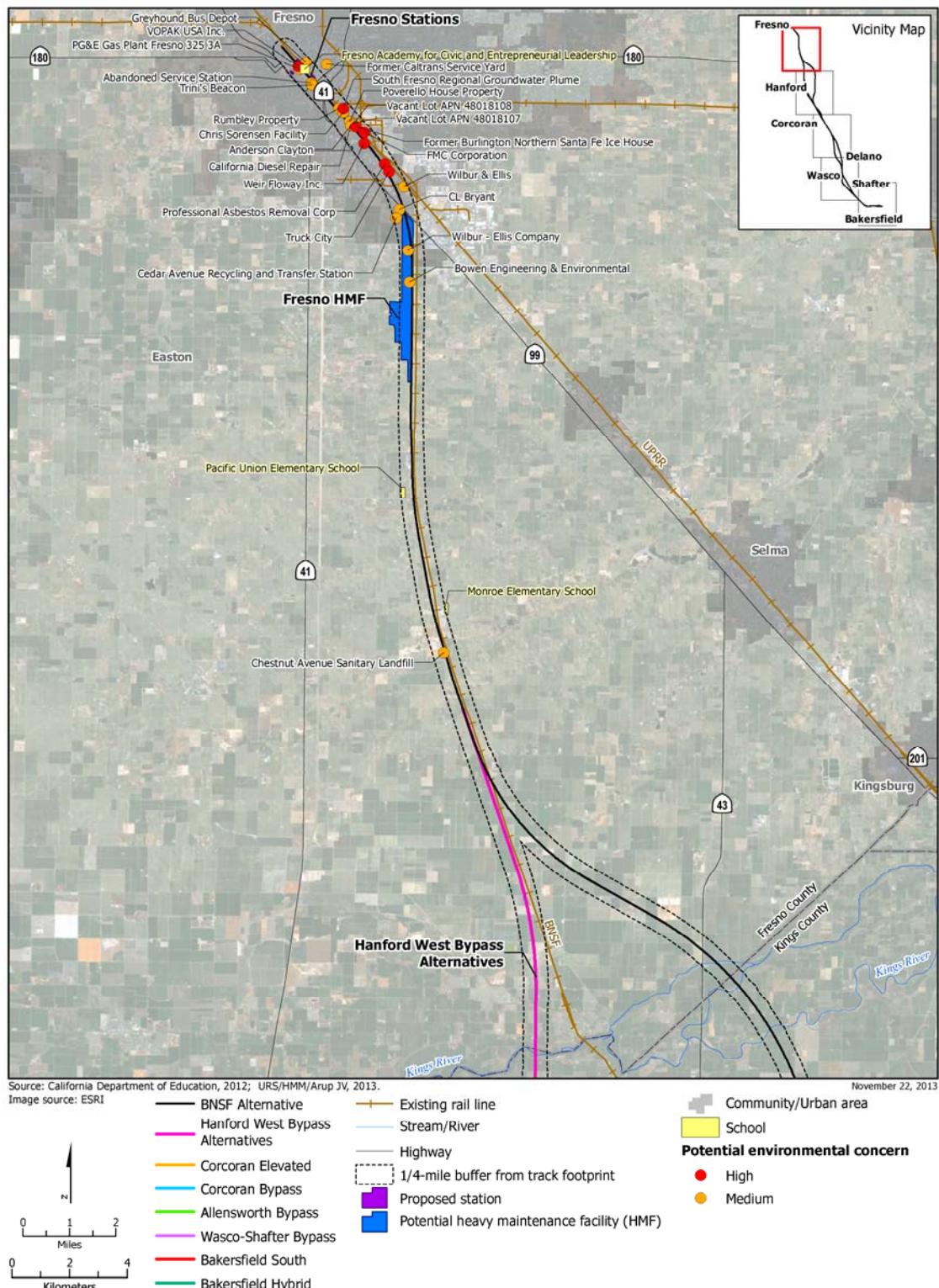


Figure 3.10-1
Fresno area: Locations of conceivable and current PECs and schools within the project study area

PECs for the Hanford West Bypass Alternatives

The Hanford West Bypass alternatives (including the Bypass 1 and 2 and Modified Bypass 1 and 2 alternatives), and the Kings/Tulare Regional Station-West Alternative, diverges from the BNSF Alternative at approximately Conejo Avenue, and then passes through the rural area west of the city of Hanford and a small portion of the incorporated area of the city. These alternatives pass 11 PEC sites with known contamination that are in various stages of investigation or remediation. Four of these PEC sites are considered current high-risk PEC sites, and one is considered a current medium-risk PEC site. The four current high-risk PEC sites are:

- Pry's Ag Service, Incorporated. This site is high risk, based on the proximity of agricultural chemicals stored next to the Hanford West Bypass 1 footprint for the east-side Excelsior Avenue grade separation.
- Johnson's Auto and Tractor. This site is high risk, based on its location within the footprint for the SJVRR grade separation, and its history as a Cortese and leaking underground storage tank (LUST) site with unresolved subsurface contamination issues involving gasoline.
- Zonneveld Dairies, Inc. This site is high risk, based on the proximity of agricultural chemicals stored next to the Hanford West Bypass 1 footprint for the west-side Jackson Avenue grade separation.
- Hadley Yocom-Lakeside Bar. This site is high risk, based on an open site assessment for a LUST. The drinking-water aquifer is affected, and the site has an active Corrective Action Plan and Remedial Action Plan. The site is located within the Hanford West Bypass 1 and Hanford West Bypass 2 footprints for the west-side Kansas Avenue grade separations.

Six conceivable PEC sites are also located in the study area for the Hanford West Bypass 1 and Hanford West Bypass 2 alternatives.

PECs for the BNSF and Corcoran Elevated Alternatives

The Corcoran Elevated Alternative is parallel and in close proximity to the BNSF Alternative. Two current high-risk PEC sites described below would apply to both the BNSF and the Corcoran Elevated Alternative (Table 3.10-3; Figure 3.10-2). The two current high-risk PEC sites are:

- Corcoran Sanitary Landfill. This site is high risk based on the proximity of the closed solid-waste disposal site to the alternative alignments.
- Puregro-Corcoran. This site is high risk based on its proximity to the alignments and unresolved subsurface contamination issues involving dichlorodiphenylchloroethylene (DDE), dichlorodiphenyltrichloroethane (DDT), toxaphene, phenoxyherbicides, nitrates, and sodium chlorate.

Six conceivable PEC site are also located in the study area for both the BNSF and Corcoran Elevated alternatives.

PECs for the BNSF and Corcoran Bypass Alternatives

The two current high-risk PEC sites listed above that would apply to the Corcoran Elevated and BNSF alternatives would also be in the study area for the Corcoran Bypass Alternative in the Corcoran area (Table 3.10-3; Figures 3.10-2 and 3.10-3).

Six conceivable PEC sites are in the study area for the BNSF Alternative. No conceivable sites are in the study area for the Corcoran Bypass Alternative.

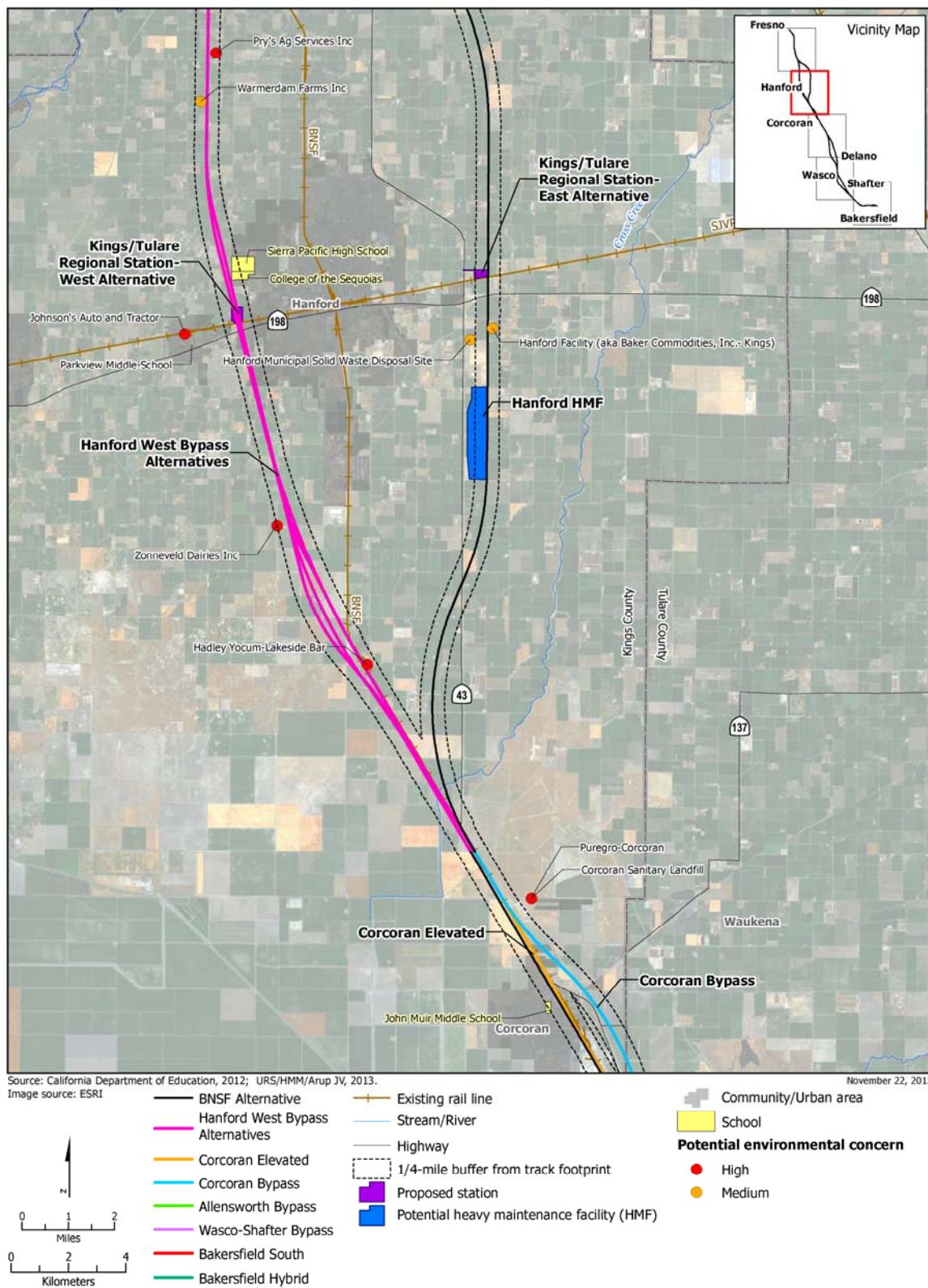


Figure 3.10-2
Hanford area: Locations of conceivable and current PECs and schools within the project study area

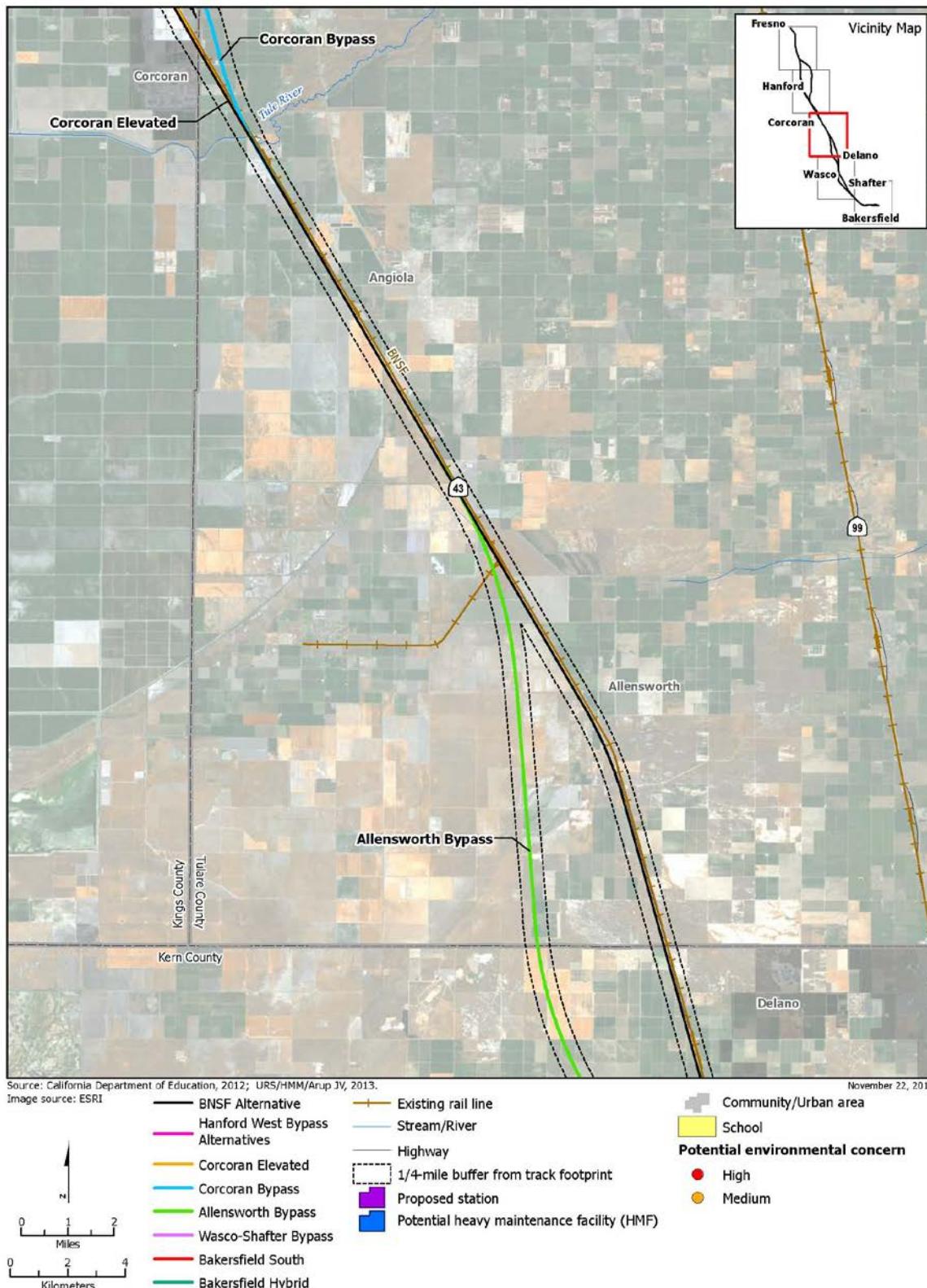


Figure 3.10-3
 Corcoran area: Locations of conceivable and current PECs and schools within the project study area

PECs on the BNSF and Allensworth Bypass Alternatives

No current high- or medium-risk PEC sites are in the study area for the BNSF Alternative. One conceivable PEC site is in the study area of this alternative. No current high- or medium-risk PEC sites or conceivable PEC sites are in the study area for the Allensworth Bypass Alternative (Table 3.10-3; Figures 3.10-3 and 3.10-4).

PECs on the BNSF and Wasco-Shafter Bypass Alternatives

Three current high-risk PEC sites, two current medium-risk PEC sites, and six conceivable PEC sites are in the study area for the BNSF Alternative in the Wasco-Shafter area (Table 3.10-3; Figure 3.10-4). The three high-risk sites are:

- Santa Fe Railway Property, Wasco. This site is high risk based on its proximity to the alignments and the potential for unresolved subsurface contamination issues, including the pesticides DDT, dichlorodiphenylchloroethane (DDD), DDE, and their metabolites. The site was divided into a consolidation area with limited future use (deed restrictions) and an unrestricted use area.
- Brown and Bryant (B&B), Shafter. This site is high risk based on its proximity to the alignments, outstanding environmental regulatory agency violations, and potential for unresolved subsurface contamination issues, including liquid fertilizers, insecticides, herbicides, fumigants, and defoliants.
- BNSF Railway, Shafter. This site is high risk based on its proximity to the alignments, outstanding environmental regulatory agency violations, and potential for unresolved subsurface contamination issues, including liquid fertilizers, insecticides, herbicides, fumigants, and defoliants. The site is associated and co-joined with the B&B facility listed above. BNSF owns a portion of the B&B site.

No high- or medium-risk PEC sites are in the study area for the Wasco-Shafter Bypass Alternative. One conceivable site is in the study area for the Wasco-Shafter Bypass.

PECs on the BNSF, Bakersfield South, and Bakersfield Hybrid Alternatives

The study area within the city of Bakersfield is common to the BNSF, Bakersfield South, and Bakersfield Hybrid alternatives east of Jewetta Avenue where the alternatives diverge. This area is a dense commercial/industrial zone from Coffee Road to Oak Street. The study area in the city of Bakersfield has 11 current ~~and conceivable~~ PEC sites with known contamination that are in various stages of investigation or remediation. Two of these sites are considered to be high risk and common to all the alternatives (Table 3.10-3; Figure 3.10-5):

- Tosco Corporation Bakersfield Refinery. This site is high risk based on its proximity to the alignment alternatives, unresolved contamination issues, and multiple environmental regulatory agency violations.
- Texaco Refining. The facility is adjacent to the Tosco Refinery. Benzene, fuel oxygenates, other solvent or nonpetroleum hydrocarbons, toluene, xylene, and arsenic have been detected in groundwater beneath the site. Scattered areas of near-surface, heavy-metal contamination are also present.

One current medium risk PEC site and six conceivable PEC site are common to the BNSF and the Bakersfield South Alternative. Five conceivable PEC sites are common to the BNSF and the Bakersfield Hybrid alternatives.

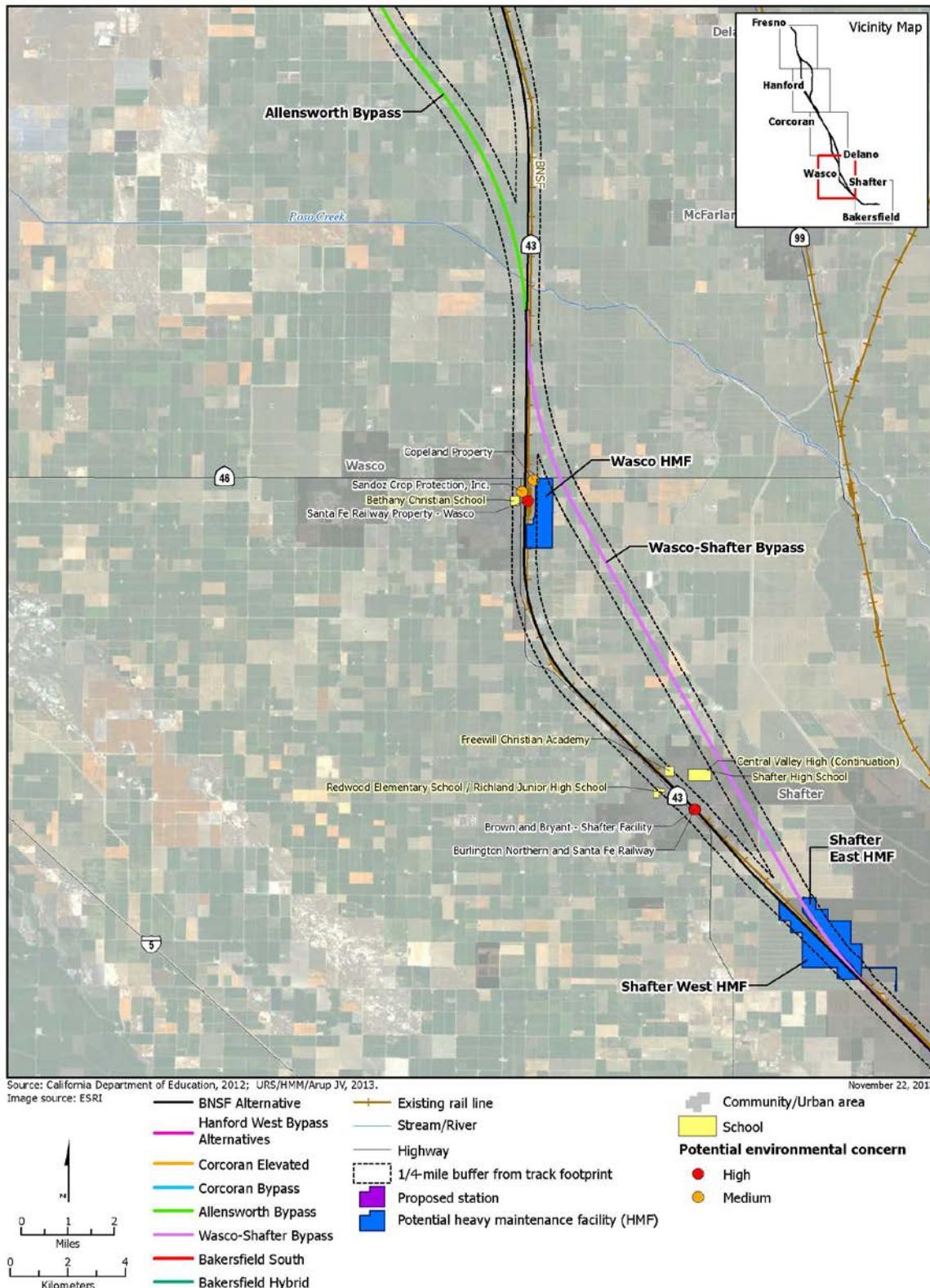


Figure 3.10-4
Wasco-Shafter area: Locations of conceivable and current PECs and schools within the project study area

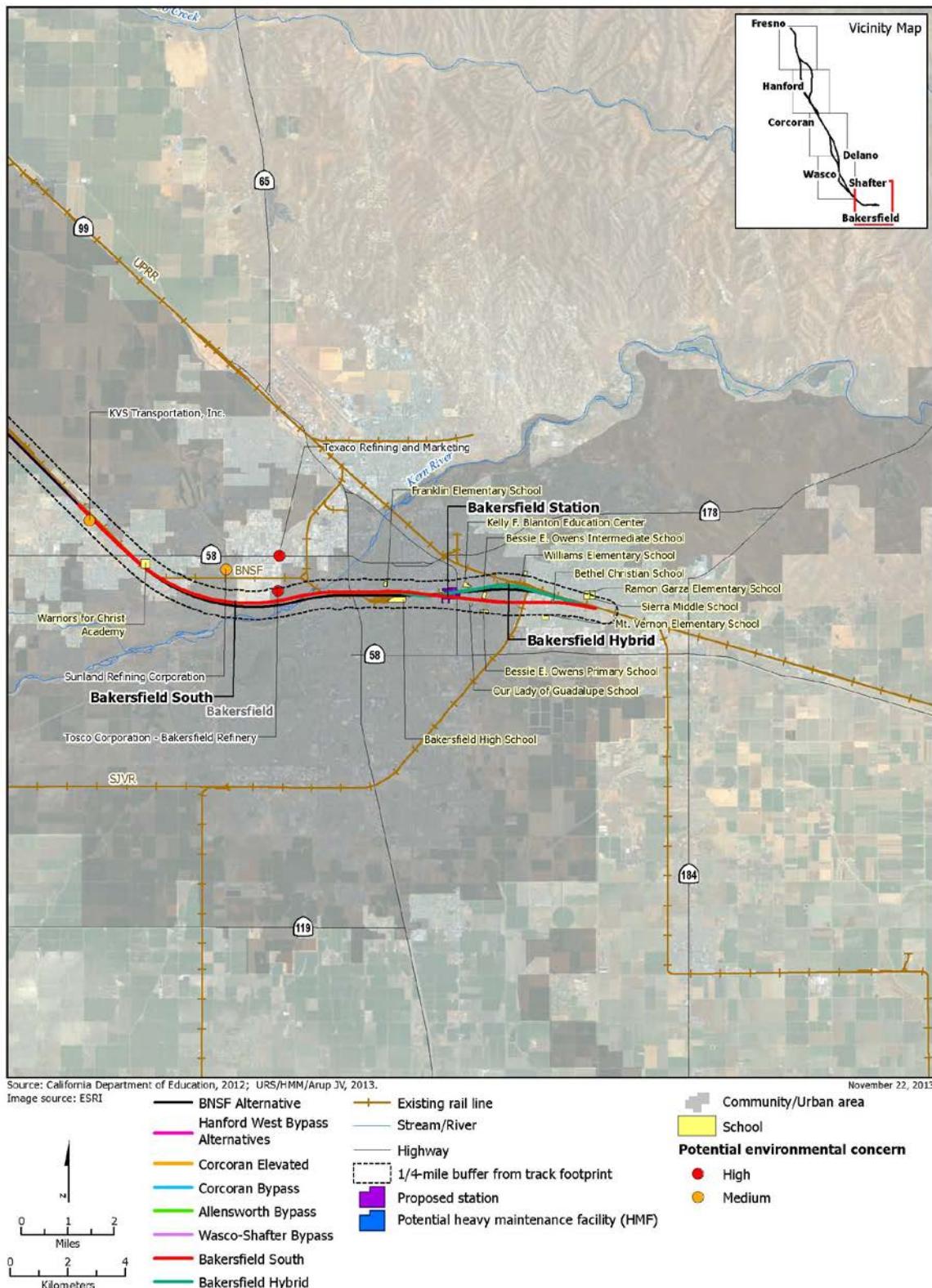


Figure 3.10-5
Bakersfield area: Locations of conceivable and current PECs and schools within the project study area

PECs within the Alternative Heavy Maintenance Facility Site Study Areas

The Fresno Works–Fresno HMF Site encompasses 590 acres; the site is in the southern limits of the city of Fresno and county of Fresno next to the BNSF Railway right-of-way (Figure 3.10-1). The study area for the Fresno Works–Fresno HMF Site has three current medium-risk PEC sites (Table 3.10-4) with known contamination that are in various stages of investigation or remediation. None of the sites is considered a current high-risk site. One of the current PEC sites is an operating solid-waste transfer station and recycling center.

The Kings County–Hanford HMF Site encompasses about 510 acres southeast of Hanford (Figure 3.10-2). One conceivable PEC site but no current medium- or high-risk PEC sites are in the study area for the Kings County–Hanford HMF Site (Table 3.10-4).

The Kern Council of Governments–Wasco HMF Site encompasses about 420 acres directly east of Wasco between SR 46 and Filburn Street (Figure 3.10-4). No current PEC sites and no conceivable PEC sites are in the study area for the Kern Council of Governments–Wasco HMF Site (Table 3.10-4).

The Kern Council of Governments–Shafter East HMF Site encompasses about 490 acres in the city of Shafter next to the BNSF Alternative and the Wasco-Shafter Bypass Alternative (Figures 3.10-4 and 3.10-5). No current PEC sites and no conceivable PEC sites are in the study area for the Kern Council of Governments–Shafter East HMF Site (Table 3.10-4).

The Kern Council of Governments–Shafter West HMF Site encompasses about 480 acres in an unincorporated portion of Kern County near the city of Shafter and next to the BNSF Alternative and the Wasco-Shafter Bypass Alternative (Figures 3.10-4 and 3.10-5). No current PEC sites and no conceivable PEC sites are in the study area for the Kern Council of Governments–Shafter West HMF Site (Table 3.10-4).

Table 3.10-4
Potentially Affected PEC Sites by Heavy Maintenance Facility Alternative

HMF Alternative	Number of PEC Sites		
	Conceivable (Low-Risk)	Current High-Risk	Current Medium-Risk
HMF Locations			
Fresno Works–Fresno HMF Site	0	0	3
Kings County–Hanford HMF Site	1	0	0
Kern Council of Governments–Wasco HMF Site	0	0	0
Kern Council of Governments–Shafter East HMF Site	0	0	0
Kern Council of Governments–Shafter West HMF Site	0	0	0
Acronyms: HMF = heavy maintenance facility PEC = Potential Environmental Concern			

Proximity to Schools

School locations are important to consider because individuals particularly sensitive to hazardous materials exposure use these facilities; additional protective regulations apply to projects that could use or disturb potentially hazardous products near or at schools. The California Public Resources Code requires projects that would be located within 0.25 mile of a school and might be reasonably expected to emit or handle hazardous materials to consult with the school district regarding potential hazards. Thirty educational facilities (defined as colleges, high schools, elementary schools, preschools, or nursery schools) are within 0.25 mile of the right-of-way and construction easements of four alignment alternatives, as shown in Table 3.10-5. Figures 3.10-1, 3.10-2, 3.10-4, and 3.10-5 show the names and locations of these schools. Twenty-two educational facilities were identified within 0.25 mile of the BNSF Alternative. Four are identified within 0.25 mile of the right-of-way of the Hanford West Bypass alternatives. Two are identified within 0.25 mile of the right-of-way of the Hanford West Bypass Modified alternatives. One was identified within 0.25 mile of the right-of-way of the Corcoran Elevated Alternative. Fourteen are within 0.25 mile of the Bakersfield South Alternative, and 13 are within 0.25 mile of the Bakersfield Hybrid Alternative right-of-way. No schools are in proximity to any of the HMF alternative sites. The local school districts were also contacted regarding plans for new schools. No proposed future school sites were identified within 0.25 mile of any of the alignments.

Table 3.10-5
Educational Facilities within 0.25 Mile of Alignment Alternative Rights-of-Way*

Facility	Distance from Footprint (miles)	Direction from Alternative Footprint	County	Status
Fresno Academy for Civic and Entrepreneurial Leadership	0.09	East of BNSF Alternative	Fresno	Active
Lincoln Elementary	0.24	West of BNSF Alternative	Fresno	Active
Pacific Union Elementary School	0.12	West of BNSF Alternative	Fresno	Active
Monroe Elementary School	0.10	East of BNSF Alternative	Fresno	Active
Frontier Elementary School	0.20	East of Hanford West Bypass Alternatives	Kings	Active
Sierra Pacific High School	0.12	East of Hanford West Bypass Alternatives	Kings	Active
	0.21	East of Hanford West Bypass Modified Alternatives	Kings	Active
College of the Sequoias – Hanford Center	0.04	East of Hanford West Bypass Alternatives	Kings	Active
	0.12	East of Hanford West Bypass Modified Alternatives	Kings	Active
Parkview Middle School	0.24	East of Hanford West Bypass Alternatives	Kings	Active
John C. Fremont Elementary	0.18	West of BNSF Alternative	Kings	Active
John Muir Middle School	0.16	West of BNSF Alternative (through Corcoran)	Kings	Active
	0.19	Corcoran Elevated	Kings	Active
Bethany Christian School	0.19	West of BNSF Alternative	Kern	Active
Free Will Christian Academy	0.09	West of BNSF Alternative	Kern	Active
Redwood Elementary School	0.13	Southwest of BNSF Alternative	Kern	Active
Richland Junior High School	0.13	Southwest of BNSF Alternative	Kern	Active

Table 3.10-5
Educational Facilities within 0.25 Mile of Alignment Alternative Rights-of-Way*

Facility	Distance from Footprint (miles)	Direction from Alternative Footprint	County	Status
Warriors for Christ Academy	0.03 0.02	North of BNSF, Bakersfield Hybrid, and Bakersfield South alternatives	Kern	Active
Country Christian School, Inc.	0.25 0.25	North of Bakersfield Hybrid Alternative North of Bakersfield South Alternative	Kern	Active
Fruitvale Junior High School	0.17 0.17 0.17	North of BNSF Alternative North of Bakersfield Hybrid Alternative North of Bakersfield South Alternative	Kern	Active
Columbia Elementary School	0.21 0.21 0.21	South of BNSF Alternative South of Bakersfield Hybrid Alternative South of Bakersfield South Alternative	Kern	Active
Franklin Elementary School	0.15 0.09 0.09	North of BNSF Alternative North of Bakersfield South Alternative North of Bakersfield Hybrid Alternative	Kern	Active
William Penn Elementary School	0.21	South of BNSF Alternative	Kern	Active
Bakersfield High School / Bakersfield Adult School	0.0 0.05 0.08	South of BNSF Alternative South of Bakersfield Hybrid Alternative South of Bakersfield South Alternative	Kern	Active
Kelly F. Blanton Education Center	0.06 0.14 0.03	North of BNSF Alternative North of Bakersfield South Alternative North of Bakersfield Hybrid Alternative	Kern	Active
Our Lady of Guadalupe School	0.21 0.06 0.23	South of BNSF Alternative North of Bakersfield South Alternative South of Bakersfield Hybrid Alternative	Kern	Active
Bessie E. Owens Intermediate School	0.0 0.04 0.03	South of BNSF Alternative North of Bakersfield South Alternative South of Bakersfield Hybrid Alternative	Kern	Active

Table 3.10-5
Educational Facilities within 0.25 Mile of Alignment Alternative Rights-of-Way*

Facility	Distance from Footprint (miles)	Direction from Alternative Footprint	County	Status
Bessie E. Owens Primary School	0.19	South of Bakersfield South Alternative	Kern	Active
Williams Elementary School	0.03	North of Bakersfield Hybrid Alternative	Kern	Active
Mt. Vernon Elementary School	0.23	South of Bakersfield South Alternative	Kern	Active
Bethel Christian School	0.06 On 0.04	South of BNSF Alternative North of Bakersfield South Alternative South of Bakersfield Hybrid Alternative	Kern	Active
Ramon Garza Elementary School	0.11 0.12 0.12	North of BNSF Alternative North of Bakersfield South Alternative North of Bakersfield Hybrid Alternative	Kern	Active
Sierra Middle School	0.15	North of BNSF Alternative, Bakersfield South, and Bakersfield Hybrid Alternatives	Kern	Active

* Includes construction easements
** Utility relocation or road improvement occurs near property; no train facilities would be located on the property.

3.10.5 Environmental Consequences

This section describes the environmental consequences of hazardous materials and wastes for the proposed project. Mitigation measures addressing hazardous materials and wastes impacts are listed in Section 3.10.7, Mitigation Measures.

3.10.5.1 Overview

The construction of the proposed project would result in a temporary increase in the transportation, use, and storage of hazardous materials. Cleanup of PEC sites and demolition of existing structures, if needed, would result in a temporary increase in waste disposal. The project could also encounter unknown hazardous materials during construction. Routine transport, use, storage, and disposal of hazardous materials are governed by numerous laws, regulations, and ordinances. The anticipated routine use and disposal of hazardous materials and wastes during construction and operation and the potential for accidental releases would be similar for all HST alternatives. Operational use of hazardous materials would be minimal at the stations and along the alignment. Use would be focused at the HMFs, where various materials would be required for vehicle maintenance.

Table 3.10-3 shows the number of PEC sites by alignment, including those categorized as potentially high risk. PEC sites would be further investigated as necessary before right-of-way acquisition and would be remediated to the extent necessary before construction.

Under current regulations, all operating and most closed landfills are required to have landfill gas migration control systems and monitoring programs. Additionally, most active and many closed landfills have landfill gas capture and treatment/destruction systems. Therefore, the likelihood of methane landfill gas impacting an area beyond the landfill property is low. All work within 1,000 feet of a landfill would require methane protection measures such as automatic methane gas sensors pursuant to Title 27 and would be coordinated with CalRecycle (California's Department of Resources Recycling and Recovery). A summary of the potential for landfill gas release from landfills within 0.25 mile of the study area is shown in Table 3.10-2.

Construction and operations impacts from hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of existing schools would occur for the BNSF Alternative, the Hanford West Bypass alternatives, the Bakersfield South Alternative, and the Bakersfield Hybrid Alternative. No impacts on schools during construction or operation would be associated with the other alternative alignments, because no educational facilities are within 0.25 mile of their construction footprints.

3.10.5.2 No Project Alternative

Under the No Project Alternative, as described in Chapter 2, Alternatives, and Section 3.2, Transportation, the population in the study area would continue to grow, and changes and improvements to the transportation infrastructure would be implemented. The anticipated growth includes other projects, as listed in Section 3.19, Cumulative Impacts. These improvements are anticipated to require types and quantities of hazardous materials for construction and operation that would be comparable to the HST alternatives. These future improvements would generate a comparable mix and quantity of hazardous wastes proportional to the magnitude of the improvements. Because many of the PEC sites identified in Section 3.10.4.2, Specific Sites of Concern, are associated with the major highway and rail transportation corridors in the project vicinity, these same sites could result in impacts on future No Project Alternative improvements involving the same corridors.

It is reasonable to assume that by 2035, some of the existing PEC sites would be investigated further and, if necessary, remediated with appropriate regulatory agency oversight. However, it is likely that investigation and cleanup of all potentially hazardous materials in the study area, including contaminated soil or groundwater, would not occur, and the potential for impacts on transportation improvements would continue. Accidental spills or releases of hazardous materials and wastes could occur with continued operation of commercial and industrial facilities or during transportation of these goods. Such accidents might result in new PEC sites that could affect future No Project Alternative improvements. With the incorporation of standard best management practices (BMPs), avoidance measures, and coordination with regulatory agencies, the potential effects from construction on contaminated sites would have negligible intensity under NEPA and would be less than significant under CEQA.

3.10.5.3 High-Speed Train Alternatives

This section evaluates direct and indirect impacts that would result from construction and operation of each HST alternative. Construction of the HST would involve the temporary transport, use, storage, and disposal of hazardous materials and wastes associated with construction, and there is the potential for disturbance of contaminants at PEC sites that are within the construction footprint. Best management practices and regulations designed to limit the potential for hazards associated with an accidental spill of hazardous materials would reduce the potential for negative environmental impacts. Permanent use of hazardous materials (such as those from the routine use and disposal of hazardous materials and wastes for HST System operation and maintenance at an HMF) would be governed by regulations that prescribe the proper use and disposal of such materials.

Construction Period Impacts

Common Hazardous Materials and Wastes Impacts

The construction of any of the project alternatives would involve transporting, using, and disposing of construction-related hazardous materials and wastes. Potentially, such construction could result in accidental spills or releases of hazardous materials and wastes, affect PEC sites (including state Cortese list sites), and result in temporary hazards to schools.

Impact HMW #1 – Temporary Transport, Use, Storage, and Disposal of Hazardous Materials and Wastes

Construction of any of the project alternatives, stations, and HMFs would temporarily increase the regional transport, use, storage, and disposal of hazardous materials and petroleum products (such as diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals). These materials are commonly used at construction sites. Hazardous waste generated during construction might consist of welding materials, fuel and lubricant containers, paint and solvent containers, and cement products containing strong basic or acidic chemicals.

Hazardous wastes (including ACMs and lead-based paint) might also be generated during demolition of existing buildings. Demolition of buildings and roadways containing asbestos and lead-based materials requires specialized procedures and equipment and appropriately certified personnel. Buildings and roadways intended for demolition that were constructed before 1980 will be surveyed for asbestos-containing materials. Those constructed before 1971 will also be surveyed for lead. A demolition plan for any location with positive results for asbestos or lead would be prepared. The plan would specify how to appropriately contain, remove, and dispose of the asbestos- and lead-containing material while meeting all requirements and BMPs to protect human health and the environment.

Facilities and construction sites that use, store, generate, or dispose of hazardous materials or wastes and hazardous material/waste transporters are required to maintain plans for warning, notification, evacuation, and site security under regulations, as described in Section 3.10.2, Laws, Regulations, and Orders. The project would require a Construction General Permit (Order 2009-0009-DWQ), which requires the designation of special storage areas and labeling, containment berms, coverage from rain, concrete washout areas, and many other BMPs designed to minimize release of contaminants from construction sites.

Accidental spills or releases could occur during transport, storage, use, or disposal of hazardous materials and wastes during construction. Standard accident and hazardous materials recovery training and procedures are enforced by the state and followed by private state-licensed, certified, and bonded transportation companies and contractors. Further, a spill prevention, containment, and countermeasures (SPCC) plan or, for smaller quantities, a spill prevention and response plan, which identifies BMPs for spill and release prevention and provides procedures and responsibilities for rapidly, effectively, and safely cleaning up and disposing of any spills or releases, would be established for the project. The intent of the SPCC regulation is prevention, not the after-the-fact reactive measures commonly described in contingency plans. Contingency plans address spill containment and cleanup and management of contaminated soil and groundwater in the event of an accidental spill. As required under state and federal law, plans for notification and evacuation of site workers and local residents in the event of a hazardous materials release would be in place throughout construction.

Compliance with various federal, state, and local regulations minimizes the risk of a spill or accidental release of hazardous materials, and therefore the impact of such a release would be of negligible intensity under NEPA, and less than significant under CEQA.

Impact HMW #2 – Inadvertent Disturbance of Hazardous Materials or Waste

Trenching and other ground disturbing activities during project construction could disturb undocumented soil or groundwater contamination. Adverse impacts could result if construction activities inadvertently dispersed contaminated material into the environment. For example, dewatering activities during construction could cause contaminated groundwater to migrate farther in the groundwater table or result in releasing contaminated groundwater to streams. Potential hazards to human health include ignition of flammable liquids or vapors, inhalation of toxic vapors in confined spaces such as trenches, and skin contact with contaminated soil or water.

The Authority will prepare a construction management plan that prescribes activities for workers to follow in areas where the presence of undocumented soil or groundwater contamination is suspected based on visual observation or smell. The construction management plan will include (but is not intended to be limited to) provisions for daily briefings of construction staff prior to work regarding what to look for, a list of contact persons in case of a possible encounter with undocumented contamination, provisions for immediate notification of construction management, notification of the applicable local enforcement agency find, consultation with that agency, and protocols for further action. In such instances, construction activities would cease until it is determined in coordination with regulatory agencies that work can proceed without the risk of injury to persons or the environment.

The potential effects of encountering unrecorded contamination would have negligible intensity under NEPA, and would be a less-than-significant impact under CEQA, because the construction management plan would be implemented to minimize the risk of exposure and/or spread of contaminants.

Alternative Alignments

Impact HMW #3 – Construction on or in Proximity to PEC Sites

All Alternative Alignments

Construction of portions of the HST may occur at or near PEC sites (some of which may have ongoing remediation activities), including sites identified pursuant to Government Code Section 65962.5 (Cortese list). Although the number and type of sites that might be affected would differ by alternative (see Table 3.10-3), impacts would be similar and would be addressed as described below.

Construction activities could encounter contaminants or interfere with ongoing remediation efforts. Unless construction activities are coordinated with site remediation activities, there could be an increased risk of damaging or interfering with remediation site controls (e.g., soil containment areas). Construction could also increase the risk of damaging or interfering with groundwater remediation facilities (e.g., extraction and monitoring wells, pumps, pipelines). Construction at sites with existing contamination could also result in the generation of additional waste materials and expose workers to hazardous materials.

Federal and state regulations and policies, including CERCLA, All Appropriate Inquiry⁵ (AAI), California Public Resources Code 21151.4, and the Certified Unified Program administered by the respective city and county agencies, would require the following environmental site assessment procedures (due diligence) be followed for future development on or near a potentially hazardous or contaminated site:

⁵ All Appropriate Inquiries, or AAI, is a process of evaluating a property's environmental conditions and assessing the likelihood of any contamination before its acquisition.

- Phase I Environmental Site Assessment (ESA). Parcel-level Phase I ESA would be conducted on all parcels. The parcel-level site assessment would include all standards for an AAI put forth by the EPA (40 C.F.R. Part 312) and performed to ASTM standards (ASTM E 1527-05 [ASTM 2005]). This investigation would include the historical use of pesticides on parcels.
- Phase II Environmental Site Assessment. If the Phase I ESA were to uncover potential contaminated site conditions, a Phase II ESA sampling study would be required. Sampling could include soil, groundwater, or other materials that contained hazardous materials. A written report would be prepared to describe the results, applicable regulations, and recommendations.
- Phase III Environmental Site Assessment. If the Phase II ESA concludes that the site or sites are contaminated, a Phase III ESA would be conducted. A Phase III ESA would generally include a management plan that establishes the design and implementation of mitigation or remediation. Cleanup may include excavation, disposal, bioremediation, or other treatments of conditions subject to regulatory action. All necessary reports, regulations, and permits would be followed to achieve cleanup of the site. Site cleanup would be conducted by the responsible party before property acquisition.

Further investigation of the PEC sites, as described above, would be conducted as needed before property acquisition. Consistent with the Statewide Program EIR/EIS commitment and Project Design Features (see Section 3.10.6), potential hazards would be minimized through the careful design and placement of project elements, avoiding contaminated sites where possible. All necessary remediation would be conducted by the responsible party before project construction. If necessary, regulatory approval for construction at contaminated sites would be sought and planned for.

Interference with any ongoing remediation activities at a given site could increase the risk of a release of contaminants or result in an interruption in cleanup; thus, construction at known PEC sites would require coordination with regulatory agencies before advancing. Where effects on PEC sites cannot be avoided, preconstruction activities would address the requirements for constructing at PEC sites in coordination with regulatory agencies. Depending on proposed project activities, such as the need for subsurface ground disturbance, and the known extent and type of contamination, requirements for constructing at contaminated sites could include further evaluation of the level of contamination and associated potential risks to human health and the environment as well as site remediation.

Because of existing laws and regulations and the procedures specified above, the effect of construction on current PEC sites would have negligible intensity under NEPA, and impacts would be less than significant under CEQA.

Heavy Maintenance Facility Site Alternatives

Three PEC sites occur within the footprint of the proposed Fresno Works–Fresno HMF Site. One PEC site, the Cedar Avenue Recycling and Transfer Station, appears on the Cortese list pursuant to Government Code Section 65962.5. If necessary, further investigation of the PEC sites, as described above, would be conducted before property acquisition. Consistent with the Statewide Program EIR/EIS commitment, potential hazards would be minimized through the careful design and placement of project elements. All necessary remediation would be conducted by the responsible party before project construction. If necessary, regulatory approval for construction at contaminated sites would be sought.

None of the other alternative HMF sites has PEC sites within its proposed footprint, as shown in Table 3.10-4. Conclusions regarding impacts under NEPA and CEQA are the same as those for the alignment alternatives.

Impact HMW #4 – Temporary Hazardous Material and Waste Activities in the Proximity of Schools

BNSF, Hanford West Bypass, Bakersfield South, and Bakersfield Hybrid Alternatives

As noted in Table 3.10-5, 22 schools are within 0.25 mile of the footprint of the BNSF Alternative, 14 of these schools are within 0.25 mile of the construction footprint of the Bakersfield South Alternative, and 13 are within 0.25 mile of the Bakersfield Hybrid Alternative. Four schools are within 0.25 mile of the Hanford West Bypass alternatives, and two schools are within 0.25 mile of the Hanford West Bypass Modified alternatives. One school is within 0.25 mile of the Corcoran Elevated Alternative. Potentially hazardous materials and items containing potentially hazardous materials would be used in railway construction. Demolition of existing structures within the project footprint could require the removal of ACMs and lead-based paint from project sites.

Any hazardous materials usage within the alternative alignments would be subject the federal, state, and local regulations and policies described above. These regulations would apply equally near school sites. Also, California Public Resources Code Section 21151.4 states that, "An environmental impact report shall not be certified or a negative declaration shall not be approved for any project involving the construction or alteration of a facility within 0.25 mile of a school that might reasonably be anticipated to emit hazardous air emissions, or that would handle an extremely hazardous substance or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code, that may pose a health or safety hazard to persons who would attend or would be employed at the school, unless both of the following occur (1) The lead agency preparing the environmental impact report or negative declaration has consulted with the school district having jurisdiction regarding the potential impact of the project on the school, and (2) The school district has been given written notification of the project not less than 30 days before the proposed certification of the environmental impact report or approval of the negative declaration."

During the course of preparation of the environmental document, the Authority has consulted with potentially affected school districts through a series of meetings discussing potential impacts, mitigation measures, and school district comments. These meetings are listed in Chapter 7, Table 7-1.

Because the project would comply with this and all other federal, state, and local regulations related to the transport, handling, and disposal of hazardous waste, the effect of HST construction related to routine transport and handling of hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school would have negligible intensity under NEPA, and the impacts would be less than significant under CEQA.

The effect of hazardous materials released to the environment in the unlikely event of a leak or spill as the result of an accident or collision during construction would largely be negligible because of the generally small quantities of materials transported or used at any given time and because of the precautions required by regulations. However, in the most unlikely and extreme case, such a release could be of moderate intensity under NEPA, and a significant impact under CEQA.

Other Alignment Alternatives

No schools are located within 0.25 mile of the construction footprint of the other alignment alternatives. Therefore, the effect of HST construction related to routine transport and handling of hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school would result in no effect under NEPA, and no impact under CEQA for these alignments.

Heavy Maintenance Facility Site Alternatives

No schools are within 0.25 mile of any of the HMF alternative sites.

Impact HMW #5 – Construction in Proximity to Landfills and Oil Well Sites

Petroleum products and product conveyances, including crude oil and refined products such as fuels and lubricants and natural gas, are considered in this analysis because they may also pose a potential hazard to human health and safety, if released into the environment. Petroleum products and pipelines, including crude oil and refined products (e.g., fuels, solvents, lubricants, and natural gas), are excluded from the definition of a “hazardous substance” in CERCLA. These materials may pose a hazard to human health and safety or to the environment if released into the workplace or the environment. Release could occur through spills during construction; rupture of a pipeline or well casing hit during construction; or through the disturbance of contaminated soil or groundwater. As discussed in Section 3.10.4, a number of wells occur within the project footprint and 200 feet of the track centerline. Active wells would need to be capped and abandoned, or relocated. Appurtenant facilities such as pipelines would also potentially need to be relocated if they fall within the footprint. Contractors would use safe and explosion-proof equipment during project construction in areas where explosion hazards exist, and would test for gases regularly. In addition, a spill prevention plan would be in place, and spill containment equipment would be at the site during removal of decommissioning of any wells. Because of this, impacts from construction in areas with subsurface gas or oil would have negligible intensity under NEPA, and the impacts would be less than significant under CEQA.

There is no indication of a significant landfill gas release potential during HST construction. Active and closed landfills undergo periodic inspections to evaluate their condition. Active landfills are required to monitor the release of methane and the corresponding hazard to nearby land use. If the HST construction occurs within 1,000 feet of a landfill, methane protection measures, such as automatic methane gas sensors, would be required pursuant to Title 27; these measures would be coordinated with CalRecycle. Similarly, all work within 100 feet of an oil well site would be coordinated with the California Department of Conservation. Prior to construction, sites would be investigated and remediated in a manner consistent with the methods discussed above for PEC sites, potentially including a review of site records and subsurface testing. During construction, the contractor would monitor for gaseous and solvent liquid wastes in accordance with the hazardous materials contingency plan and BMPs. Because of the low potential for landfill gas release and the existing regulatory framework, the explosion risk would be less than significant under CEQA, and have negligible intensity under NEPA.

Project Impacts

Common Hazardous Materials and Waste Impacts

Operation and maintenance of any of the HST alternatives would involve the transport, use, storage, and disposal of small quantities of hazardous materials or wastes associated with the routine maintenance of stations and other facilities. The HST System would be dedicated to passenger transport and is not intended for the transport of freight or hazardous substances. Therefore, no impact would result from the transport of hazardous materials or hazardous wastes on the train itself.



CALIFORNIA
High-Speed Rail Authority



U.S. Department
of Transportation
Federal Railroad
Administration

Impact HMW #6 – Transport, Use, Storage, and Disposal of Hazardous Materials and Wastes

All Alternative Alignments

Operation of the HST would require only minor amounts of hazardous materials. Examples of the use of these materials are the periodic use of herbicides in the right-of-way to control weeds, janitorial supplies at stations, and greases to lubricate switching equipment along the trackway. The quantities of materials used and wastes generated by the HST would be small compared to wastes generated by other transportation services (such as conventional passenger automobiles or air travel, which use petroleum-based vehicle fuel as the primary means of power) and commercial or industrial production facilities. The routine transport, storage, use, and disposal of the substances used by the project are regulated by a number of federal, state, and local laws. The Authority would prepare and implement plans to manage the transport, storage, use and disposal of hazardous materials. These plans would include:

- A California hazardous materials business plan (pursuant to California Health and Safety Code Section 25500), which specifies the requirements for material inventory management, inspections, training, recordkeeping, and reporting.
- A SPCC plan, pursuant to 40 C.F.R. 112 or, for small quantities, a spill prevention and response plan, both of which would identify BMPs for spill and release prevention and provide procedures and responsibilities for rapidly, effectively, and safely cleaning up and disposing of any spills or releases.

Also, if necessary, the project would register with the State of California as a hazardous waste generator and implement the requirements for storage, labeling, contingency planning, training, shipping, reporting, and disposal, pursuant to Title 22 CCR Section 66260.

Because conformance with these established policies would reduce the potential for improper handling of materials and wastes that could result in routine and accidental releases, the effects would have negligible intensity under NEPA and would be less than significant under CEQA. Although the transport and use of hazardous materials are governed by numerous regulations, there is always a chance that a spill or accidental release could occur. Compliance with various federal and state regulations minimizes the risk of a spill or accidental release of hazardous materials. Regulations also require spill contingency and cleanup plans. With adherence to these regulations, the effect of hazardous materials released to the environment in the unlikely event of a leak or spill as the result of an accident or collision would have negligible intensity under NEPA and would be less than significant under CEQA.

The HST is a passenger transportation system; it would not be used to transport freight or hazardous substances. Therefore, no impact would result from the transport of hazardous materials or hazardous wastes within the system. As described in Chapter 2, Alternatives, all existing transportation routes that potentially conflict with the proposed HST alternatives would be relocated to avoid such conflicts (relocation would include the use of grade separations). The HST System would be constructed on tracks separate from slow-speed passenger and freight rail, with physical separation by distance and, potentially, by physical barriers, if FRA standards require them. These separations as well as design characteristics that would keep any potential HST derailment within the track guideway (see Section 3.11, Safety and Security) would eliminate the potential for collisions with any transporter of hazardous materials that could result in a release to the environment.

Heavy Maintenance Facility Site Alternatives

Operation of the proposed HMF (regardless of the alternative site selected) would involve the use, storage, and disposal of hazardous materials and petroleum products associated with the maintenance of HST equipment. Hazardous materials and wastes and storage equipment could include fuel storage tanks, storage tanks for lubricants and used oils, washracks, storage tanks for degreasing solvents and for used solvents, paints/coatings and associated solvents, and compressed gases and solder for welding. Compared with operating the high-speed train and its stations, operation of the HMF may involve a somewhat larger quantity of materials and wastes (for maintaining and repairing rail vehicles).

The project would be required to register with the State of California as a hazardous waste generator and to implement the requirements for storage, labeling, contingency planning, training, shipping, reporting, and disposal (pursuant to Title 22 CCR Section 66260). The effect of a release of hazardous materials to the environment in the unlikely event of a leak or spill as the result of an accident or collision would have negligible intensity under NEPA and would be less than significant under CEQA with adherence to regulations regarding spill contingency planning and cleanup.

Impact HMW #7 – Hazardous Materials and Wastes in the Proximity of Schools

Use of hazardous materials and generation of hazardous wastes would be limited mostly to small amounts for routinely maintaining HST stations and other facilities, and larger amounts for maintaining and repairing trains at the HMF.

All Alternative Alignments

The trains would operate on electric power. Therefore, powering the trains would have none of the emissions associated with the use of diesel fuel, natural gas, or other fuels. No acutely hazardous materials would be required to operate the passenger rail service under any of the alternatives except potentially at the HMFs (see below). The system would have no at-grade crossings, so the potential for accidents between the train and vehicles transporting hazardous materials is eliminated. Operation of the passenger rail service would have no effect under NEPA or CEQA with respect to the use of acutely hazardous substances near schools.

Heavy Maintenance Facility Site Alternatives

No schools are within 0.25 mile of any of the HMF alternative sites.

Impact HMW #8 – Operation in Proximity to Landfills and Oil Well Sites

There is no indication of a significant landfill gas release potential during HST operation. Active and closed landfills undergo periodic inspections to evaluate their condition. Active landfills are required to monitor the release of methane and the corresponding hazard to nearby land use. In addition, if the HST would operate within 1,000 feet of a landfill, additional methane monitoring would be instituted to monitor the release of gas near this altered land use. Provided that these systems are operated as designed and permitted, active monitoring would keep the release of methane gas within regulatory thresholds. Because of the low potential for landfill gas release, and the existing regulatory framework, the explosion risk would be less than significant under CEQA, and of negligible intensity under NEPA.

Oil and gas wells in and near the study area may be impacted by the HST. As discussed in Section 3.11, Safety and Security, the HST would have design characteristics that would keep any potential derailed HST on its tracks, eliminating the potential for collisions with oil wells, which could result in a release of potentially explosive gas to the environment. Because of the low

potential for release of gas from inactive oil wells and the existing regulatory framework, the explosion risk would be less than significant under CEQA, and of negligible intensity under NEPA.

3.10.6 Project Design Features

The Authority and FRA have considered avoidance and minimization measures consistent with the commitments in the Statewide Program EIR/EIS documents. Applicable design standards for hazardous materials and waste that would be used for the project are provided in Appendix 2-D. These design features would minimize impacts due to hazardous materials as they relate to the proper transport, storage, use and disposal of hazardous materials, preparation of plans to handle unforeseen spills or undocumented contamination to reduce the exposure of workers and the public and the spread of contaminants, and specific investigation of properties before acquisition to remove or avoid contaminated areas to reduce exposure of workers and the public to hazardous material.

- Materials and wastes would be handled, transported, and disposed of in accordance with applicable state and federal regulations, such as RCRA, CERCLA, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act (see Section 3.3, Air Quality, for regulations applying to hazardous air pollutants).
- During the property acquisition process, analysis of properties acquired for construction of the HST will be conducted, as needed, including title searches and determination of which properties require further assessment for hazardous material contamination. Prior to acquisition of properties, the Authority will conduct Phase 1 ESAs in accordance with standard ASTM methodologies to characterize each site. The determination of what parcels require soil testing and where testing should occur would be informed by the Phase 1 ESA and made in conjunction with state and local agency officials. Testing and appropriate remediation would be conducted prior to acquisition. Remediation activities may include removal of contamination, in-situ treatment, or soil capping.
- All work within 1,000 feet of a landfill would require methane protection measures, including gas detection systems and personnel training, pursuant to Title 27, the hazardous materials contingency plan, and BMPs.
- Nominal design variances, such as the addition of a plastic barrier beneath the ballast material to limit the potential release of volatile subsurface contaminants, may be implemented in conjunction with site investigation and remediation.
- The Authority is aware that undocumented contamination could be encountered during construction activities and is committed to work closely with local agencies to resolve any such encounters. A construction management plan will be developed that will include provisions for the disturbance of undocumented contamination.
- Demolition plans will be prepared for the safe dismantling and removal of building components and debris. The demolition plans will include a plan for lead and asbestos abatement.
- An SPCC plan or, for smaller quantities, a spill prevention and response plan, will be implemented that prescribes BMPs to follow to clean up any hazardous material release. During operation of the HST, hazardous materials monitoring plans, such as a hazardous materials business plan and an SPCC plan, will be implemented.
- Storage of hazardous materials during construction and operation will meet requirements for transport, labeling, containment, cover, and other BMPs to comply with the State Water Resources Control Board Construction General Permit conditions.

- To the extent feasible, the Authority is committed to identifying, avoiding, and minimizing hazardous substances in the material selection process for construction, operation, and maintenance of the HST System. Moreover, using an Environmental Management System, the Authority will evaluate the full inventory of hazardous materials employed on an annual basis and will replace hazardous substances with nonhazardous materials to the extent possible. These standards and material specifications would aid in promoting safety for passengers and employees.

3.10.7 Mitigation Measures

The Authority and FRA have considered avoidance and minimization measures consistent with the Statewide and Bay Area to Central Valley Program EIR/EIS commitments (Authority and FRA 2005, [2008] 2012). Materials and wastes would be handled, transported, and disposed of in accordance with applicable state and federal regulations, such as RCRA, CERCLA, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act (see Section 3.3, Air Quality, for regulations applying to hazardous air pollutants). During project design and construction, the HST project will implement the measures discussed in Section 3.10.6 to reduce impacts resulting from the use of hazardous materials, generation of hazardous waste, and potential disturbance of hazardous waste sites, as discussed in Section 3.10.5, Environmental Consequences.

To mitigate for potential impacts on schools within 0.25 mile of the project footprint, the following mitigation measure will be implemented:

HMW-MM#1: Limit use of extremely hazardous materials near schools during construction. The contractor shall not handle an extremely hazardous substance (as defined in California Public Resources Code Section 21151.4) or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code within 0.25 mile of a school. Prior to construction activities, signage will be installed to delimit all work areas within 0.25 mile of a school, informing the contractor not to bring extremely hazardous substances into the area. The contractor would be required to monitor all use of extremely hazardous substances.

The above construction mitigation measure for hazardous materials and wastes is consistent with California Public Resources Code Section 21151.4, and would be effective in reducing the impact to a less-than-significant level. Implementation of the mitigation measure is not expected to result in secondary impacts.

Impacts of Mitigation

The installation of signage to alert contractors of the presence of nearby schools will result in negligible visual impacts because they will be similar to other traffic signs in school areas. No other secondary impacts would occur in other areas. For this reason, the impacts of this mitigation measure would be less than significant under CEQA, and the impact would have negligible intensity under NEPA.

3.10.8 NEPA Impacts Summary

This section summarizes impacts identified in Section 3.10.5, Environmental Consequences, and evaluates whether they are significant adverse effects according to NEPA. Under NEPA, project effects are evaluated based on the criteria of context and intensity. The following NEPA impacts were identified under the No Project Alternative and the HST project alternatives. The context for exposure to a hazardous material is the location of the hazardous materials or waste and the

potential for exposure that would result in increased harm to an individual's health or to the environment, relative to current conditions.

Under the No Project Alternative, the general increase in population over time in the Central Valley would result in the increased use of hazardous materials and increased waste generation during construction and operation of future infrastructure and development projects. These future improvements would use hazardous materials and generate hazardous wastes proportional to the magnitude of the improvements. Because many of the PEC sites identified in Section 3.10.4.2, Specific Sites of Concern, are associated with the major highway and rail transportation corridors in the project vicinity, these PEC sites and other nearby similar sites could conflict with future infrastructure and development projects. With the incorporation of standard BMPs and avoidance measures, and coordination with regulatory agencies, the potential effects from construction on contaminated sites would be of negligible intensity and would not be considered significant under NEPA.

Construction of the Fresno to Bakersfield Section of the HST System would result in the temporary increased use of hazardous materials and a temporary increase in waste generation, including ACM and lead-based materials from demolition activities. Adherence to regulations regarding the routine use, storage, and disposal of hazardous materials would result in no effects. Transport and use of hazardous materials during construction could result in accidental spills of hazardous materials. The potential for accidental spills and releases would be reduced to negligible intensity with adherence to regulatory requirements and the limited use of extremely hazardous materials near schools, as documented in the Section 3.10.6, Project Design Features, and in Section 3.10.7, Mitigation Measures. Although the relative intensity of an impact can be amplified in an area where children are present because of their sensitivity, the proposed approach, which combines adherence to the implementation of established regulations and additional control of substances near schools, would effectively reduce the intensity of potential impacts to negligible, and would not be significant under NEPA.

Construction could inadvertently disturb sites with previously undocumented contamination or could affect known sites with contaminated soil and groundwater. To the extent feasible, project design would avoid known sites, for example, by elevating the track. Construction at contaminated sites would be contingent on coordination with regulatory agencies; therefore, the potential effects are considered to be of negligible intensity, even when considering the potential to disturb undocumented sites. Therefore, these project impacts are not considered significant under NEPA.

Construction could also disturb oil wells and landfills or their surrounding environments. The potential for a methane or natural gas release as a result of altered subsurface conditions that could lead to an increased explosion risk is of moderate intensity in the context of site-specific conditions such as a landfill or oil and gas wells or associated equipment. Compliance with existing regulations would reduce the intensity of potential explosion risk to negligible. The potential effects during construction would not be considered significant under NEPA.

During operation of the HST System, only minor amounts of hazardous materials would be used, and all laws, regulations, and ordinances would be followed with respect to the transport, use, storage, and disposal of hazardous materials. Use of materials at the HMF could result in accidental spills of hazardous materials that would result in effects of negligible to moderate intensity, depending on the materials and the severity of a spill and the HMF site selected. In general, implementation of regulatory requirements would reduce the potential for a severe spill to a negligible intensity, and would not be significant under NEPA. The HST System would be fully public access-controlled, except for stations where the buildings and cleaning would follow strict health and safety requirements; therefore, public exposure risk would be of negligible intensity, and would not be considered significant under NEPA.

3.10.9 CEQA Significance Conclusions

Table 3.10-6 provides a summary of CEQA impacts, the associated mitigation measures, and the level of significance after mitigation.

Table 3.10-6

Summary of Significant Hazardous Material and Waste Impacts and Mitigation Measures

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Construction			
HMW#4. Temporary Hazardous Material and Waste Activities in the Proximity of Schools Twenty-two schools are within 0.25 mile of the construction footprint of the BNSF Alternative; 4 schools are within 0.25 mile of the Hanford West Bypass alternatives; 2 schools are within 0.25 mile of the Hanford West Bypass Modified alternatives; 1 school is within 0.25 mile of the Corcoran Elevated Alternative; 14 schools are within 0.25 mile of the construction footprint of the Bakersfield South Alternative; 13 are within 0.25 mile of the Bakersfield Hybrid Alternative.	Significant with respect to leak or spill due to accident or collision	HMW-MM#1: No use of extremely hazardous substances or a mixture thereof in a quantity equal to or greater than the state threshold quantity (Health and Safety Code Section 25532) within 0.25 mile of a school.	Less than significant
Acronyms: HMW-MM = hazardous material and waste mitigation measure			